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ORIGINAL COMMUNICATIONS.

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THE SOCIETY OF PROGRESSIVE ORAL ADVOCATES: ITS ORIGIN AND PURPOSE.

DR. MAX A. GOLDSTEIN, St. Louis

Some months before the Hartford Convention of American Instructors of the Deaf I received an invitation from the Program Committee to present an address before the oral section. I accepted this invitation conditional on my ability to attend the meeting.

I was surprised and somewhat embarrassed at the subsequent correspondence pertaining to this invitation, in which the official request for this address was politely withdrawn.

I am not unfamiliar with the internal politics of a national convention of educators, medical men, and other professions, and this particular instance offered no especial difference in diagnosis.

I recognized the machinery that was responsible for the recall of this invitation: parts of the mechanism had been too freely oiled, other parts had become rusty, still others were evidently misfits—all working to cross-purposes and hardly conducive to a smooth-running mechanism. Such was my personal introduction this season to the Convention of American Instructors of the Deaf.

In attempting to analyze the complexion and character of this organization, I find a number of conflicting elements that offer sufficient reason for the lack of effectiveness in such an important national body. There seem to be several distinctly opposing factions: one, the advocates of pure oralism; another, adherents to the manual

and sign methods; the third faction in this organization is known as the followers of the "combined system."

One of the inelegant figures of speech that has received but little recognition in rhetorical classification is "word juggling." The best example that I can find of "word juggling" in the field of education of the deaf is *"combined system."* The very expression of this phrase rings inconsistent. I would define it as an educational compromise, a political subterfuge, and a personal injustice to pupil, teacher, and institution.

The education of the deaf is subject to evolution and progress like all other educational measures. The past quarter of a century has witnessed the development of pure oralism as an individual system of instruction of the deaf. It has met with tremendous handicaps in its upbuilding, especially at the hands of the advocates of the manual and sign methods; strange to say, this opposition has been most intense here in America, where progress in every phase of human development seems to have been given its greatest impetus. Historically it would be interesting to trace the origin of these antagonistic influences, but such is not the purpose of this message.

I regret that the conflicting influences of the executive management of the Hartford Convention placed me in so embarrassing a position that I could not feel free to attend this meeting. There was so much for me to learn there, and I regret that any man or committee should be empowered to place an embargo on knowledge. It also would have offered an interesting opportunity for psychological study. I would have been glad to meet the leaders of the various factions that compose this national organization and to analyze the motives that actuate them in presenting and maintaining their various viewpoints. It would offer much food for thought and also food for tangible and concrete expression to see men and women who represent a great and noble cause working at loggerheads in maintaining their political and pedagogical strength, revealing personal jealousies, and at times losing sight almost entirely of the splendid cause which they represent—*help for the deaf child.*

My investigation of the antagonistic relations that have existed between the signers and oralists for many years lead to but one painful conclusion, namely, that there is no better understanding to-day than there was ten years ago. *How, then, does such a national convention promote the welfare of the deaf child if the influential factors responsible for his education continue in an agreement to disagree?*

True, there is the enthusiast and advocate of the "combined system;" he, too, must have his day. To me the "combined system," which represents a compromise between the signer and the oralist, is in its net results very much like the problem of adding apples and pears to get peaches. It is a practical impossibility if efficiency of either system is its goal.

One of the most important reasons for the creation of the "combined system" is the politics of the State school coupled with the demands of educational progress. There are many superintendents of State schools and many of their teachers who have not investigated or admitted with an unbiased mind the tremendous possibilities of the exclusive oral training.

Even if the State superintendent were inclined to develop pure oralism in his institution, the politics of his school and of the board of control in that State would force his hand in the appointment of some of his teachers, many of whom hold positions by virtue of political preferment rather than for their actual ability to teach a deaf child efficiently.

The "combined system," therefore, provides the necessary political loop-hole for the reappointment of sign teachers and the introduction of some few oral teachers, to satisfy the protests of progressives, reformers, and other foreign bodies injected into the mechanism of the otherwise smooth-running politico-educational machine.

What, then, does a convention of instructors of the deaf, composed of these heterogenous forces, actually accomplish? I have scanned the reports for a number of years of these conventions and from my humble viewpoint the net results are hardly in proportion to the amount of energy expended. There are men and women in these conventions whose influence could be made a powerful factor for the advancement of this noble cause. There are papers presented and ideas suggested which, if given a fair consideration and actual application, might do much toward improving this special educational work. It is deplorable, therefore, that in the face of such splendid possibilities so little that is tangible and practically applicable is actually accomplished.

I contend, therefore, that a national organization of educators must have not only a definite purpose and an ideal toward which every individual member of such organization is striving, but must also develop an amicable coöperation of all of its factors and forces and bring the combined efforts, brains, energies, and influences to a noble focus.

What is true of the Convention of American Instructors of the Deaf to a great degree has also been demonstrated in a lesser measure in the younger national body, created by the oral workers—the American Association to Promote the Teaching of Speech to the Deaf.

As pure oralism gained larger recognition the far-sighted and influential educators of the older organization evidently sense the observation that I have just made, namely, that the cause of pure oralism could be more effective in an independent organization, and this evidently was responsible for the creation of the latter body.

In a conversation a few weeks ago with three or four of our best-known, experienced teachers, I casually asked, "Who is the executive officer of the American Association to Promote Teaching of Speech to the Deaf, and when and where is the next meeting to be held?" To my surprise, I could get no answer from any of them, and was referred to the advertisement of this organization in *The Volta Review*. To the present date I have not been able to ascertain when and where the next meeting of this Association takes place.

One of the cognosceti who is thoroughly familiar with the inside history and workings of this organization writes: "I regret to advise you that the date for the next meeting of the American Association to Promote the Teaching of Speech to the Deaf is still indefinite. It is reported that a meeting may be held in 1918 if 500 new members among the teachers of the deaf are secured. This will help insure the necessary operating expenses. Even the assurance of the expenses of the meeting may not be all sufficient to secure this meeting, as several factions have developed under the leadership of influential men. One faction declares that the meeting will take place soon; another feels that there is no necessity for such meeting at the present time."

What a pathetic state for this Association to be in! There are important problems, many awaiting solution at the hands of these experienced teachers and authorities. The convention and coöperation of these interests again depends on the adjustment of political and personal differences between a small number of the leaders.

Since the organization of the Central Institute for the Deaf three years ago and the practical association between the experienced teachers of the deaf and the ear specialist the importance of a constant and closer coöperation of these two forces has become keenly apparent. The success of this institution and the development of such new phases in the work as we have already been able to intro-

duce has been the result of frequent conferences between the teachers and myself and the maintenance of one ever-present and vital factor —*coöperation.*

Coöperation is the keynote of success in every enterprise, institution, convention, or other body where various forces, talents, and influences are present.

A valuable adjunct to the smooth-running character of any machinery driven by brains and man is democracy. Coöperation and democracy is a combination that always spells success. It is the absence of coöperation and democracy that has hampered the progress of the Convention of American Instructors of the Deaf, and this also threatens the vitality of the American Association to Promote the Teaching of Speech to the Deaf.

Based on the principles of coöperation and democracy, we have dared to organize another society, with the hope that these principles may be definitely maintained as the foundation stones of this new structure.

At a meeting of teachers, alumni, and post-graduates of the Central Institute for the Deaf, this new society was created in July, 1917, in St. Louis. Its name: *The Society of Progressive Oral Advocates.* Its purpose: to advance educational measures of interest to the deaf along purely oral principles. Its membership: open to everyone interested in the oral education of the deaf.

The Executive Committee of this new society announces the following program:

1. The first annual meeting of the Society of Progressive Oral Advocates will take place in St. Louis in July, 1918.

2. An interesting program of papers and demonstrations has already been promised.

3. A comprehensive survey of teaching methods, number of pupils per teacher, qualification of teachers, equipment, proportion of pupils taught orally and by signs, complexion of the governing boards, methods of appointment of such boards—in short, a survey of as much detailed information as can be acquired of the operation and maintenance of every State school for the deaf and of all departments for the education of the deaf in the public schools of the larger cities—will be presented for consideration and discussion.

4. Following the discussion of this survey a resolution will be introduced which has for its purpose a standardization of schools for the deaf similar to the one that became effective a few years ago through the influence and agency of the Rockefeller Institute, in

creating a standard of efficiency for medical colleges and the medical departments of teaching universities.

The organizers of this new society feel that there is much to be done in this important field of special education, and that the success of such work depends absolutely on coöperation and democracy.

This society will draw additional strength for support in the coöperation of a number of prominent ear specialists in various medical centers of this country.

The several national associations of ear, nose and throat specialists have already demonstrated their interest in the education of the deaf in the past few years. Important symposia have been held at the annual meetings of these societies in which prominent educators of the deaf and ear specialists participated in the program.

I cite the National Otological Congress in Boston in 1912; the American Larngological, Rhinological and Otological Association in Washington in 1914; the American Academy of Ophthalmology and Oto-Laryngology in Chicago in 1916; the American Otological Society in Washington in 1916, and the American Academy of Ophthalmology and Oto-Laryngology in Memphis in 1917.

At all of these meetings practical demonstrations of the work done in the education of the deaf child were presented and a liberal discussion participated in by the ear specialists and teachers present. We hope to effect an even closer coöperation between these active forces, and the call of the first annual meeting of the Society of Progressive Oral Advocates must tell its own story.

Everyone interested in the progressive oral education of the deaf child is eligible to membership in this society and is hereby invited to join. Membership dues are one dollar per year, and the secretary is Miss Augusta Roeder, Central Institute for the Deaf, 818 S. Kings Highway, St. Louis. A copy of the constitution and by-laws will be furnished each applicant for membership.

3858 Westminster Place.

TWO HUNDRED CONSECUTIVE TONSILLECTOMIES UNDER LOCAL ANESTHESIA.

DR. OSCAR WILKINSON, Washington, D. C.

The subject of tonsillectomy is an exceedingly interesting one, both to the general practitioner and the specialist. This is particularly true at the present time on account of the role that the infected tonsil plays in obscure general infections. The method of operation does not necessarily interest a general practitioner except insofar as it concerns the patient;—that is, facilitates his recovery and assures the best end result. The method of operation, however, is of greatest interest to the operator, both from his standpoint as to ease of execution and time saved in the work, as well as the interest of the patient during the operation, the recovery period, and last but not least, the final result.

Preparation of patient. In doing these operations the patients have had the following preparation: A laxative is ordered two days prior to the operation. It is our custom to give an aloin belladonna and strychnine pill or a saline laxative. The throat should be free of inflammation. The use of fifteen per cent alcoholic solution as a gargle is one of the best throat cleansing washes and is particularly advisable prior to these operations. I invariably operate in the morning as early as eight o'clock and the patient is given either no food at all or simply permitted to have a cup of coffee or some light liquid diet. Just before the operation the patient is given a hypodermic of one-half grain codeine sulphate with, in certain cases, one two-hundredth grain of atropine sulphate.

The anesthetic. I use first, locally, a six per cent solution of cocaine painted over each tonsil and into the tonsil crypts and then over the soft palate and pharynx. In sensitive subjects this latter prevents the tendency to gag which would interfere with the injection of the subsequent solution. I use as an injection a one per cent solution of alypin, or novocain or a one-tenth per cent cocaine solution, to which from five to eight drops of adrenalin have been added. Alypin and novocain are preferable to cocaine. About one-half cubic centimeter of the solution selected is injected into the anterior superior surface of the tonsil proper, when it is possible to get the solution to remain in the tissue. In friable tonsils, often the solution will not stay in the tonsil tissues. Unless the tonsil is bleached from the effects of the medicine you do not get anesthesia.

The next step of anesthesia is to place two or three drops just underneath the mucous membrane at the plica supratonsillaris. After this two or three drops should be placed under the mucous membrane in the middle posterior surface of the tonsil. A similar amount should then be placed at the middle anterior surface of the tonsil just under the mucous membrane, and a few drops should then be placed underneath the mucous membrane at the base of the tonsil. We next take a tonsil forceps and grasp the tonsil near its center and draw it forwards and inwards, thus showing the outline of the tonsil in its capsule. The needle is now passed through or beyond the superior portion of the tonsil back of the capsule and about ten drops are injected. Next, about the same amount is injected behind the tonsil at about its center and then back of the tonsil near its base. The same procedure is now carried out for anesthetizing the opposite tonsil. By the time the second tonsil has been injected the first one is ready for the operation. The entire amount of the solution used is generally from two to three drams.

Technique of the operation. The patient should be in a sitting posture, usually in a straight back chair with his head steadied by an assistant, who also holds down the tongue with the tongue depressor. In all cases, however, this is not necessary. The tonsil is grasped by a tonsil forceps. (I have found these, which I had made a number of years ago, very satisfactory.) The tonsil being grasped near its superior free border and drawn forwards and inwards, an incision is made through the mucous membrane *only*, along the superior, anterior and posterior borders of the tonsil, with a sharp knife with a double edge, slightly curved on the flat. This incision should never go through the capsule of the tonsil and it should be made as far forward and as near the tonsil tissue as possible. By doing this, the least possible sacrifice of tissue is secured, which is particularly to be desired; first, on account of less traumatism; second, on account of more rapid healing, and third, on account of less ultimate disfigurement. A second forceps is now used to grasp the superior portion of the tonsil at the margin of this incision. A dull knife is used simply to push back the mucous membrane until a more firm hold can be secured on the superior portion of the tonsil with its capsule. When this has been secured, the dull knife can be used simply to push the tissue away from the capsule, not by cutting strokes but simply by scraping back, as it were, the tissues, always bringing the force of this effort against the capsule. It is surprising to see how much soft tissue can be carelessly torn away from the loose cellular tissue posterior to the tonsil capsule.

In this part of the operation the object is simply to hug the capsule tightly so that when the operation is completed you have a smooth cavity which, from appearances, has a capsule lining the cavity from which the tonsil has been removed. In other words, one is almost persuaded that, in cases in which this has been properly done, there has been an *intra-capsular* operation. The tonsil is gradually pushed down on all sides until it is hanging loose in the throat, being detached from the anterior and posterior pillars with accuracy and precision, securing absolutely nothing with the tonsil itself except the tonsil in its capsule and the mucous membrane covering the anterior surface of the tonsil. When the tonsil lies loose in this position a snare with a small loop of No. 8 piano wire is made to encircle and cut off the lower portion of the tonsil and thus the operation is completed. The bleeding being controlled by pressure, hemostat or ligature, the other tonsil is now removed in the same manner. When both tonsils have been removed and the hemorrhage stopped, the cavities are painted with phenol and iodine solution, then compound tincture of benzoine and the patient sent to bed.

After-care of the patient. The patient is instructed not to attempt to clear the throat more than is absolutely necessary to prevent swallowing of blood. Those who complain of pain are given an ice pack around the neck, and some demand another injection of codeine or codeine by the mouth. In nervous subjects I have found that one or two doses of bromide of potash has a good effect. After four to six hours very few patients complain of pain of sufficient amount to demand any further anodine. In patients in whom the salivary glands are excessively active the use of atropine is sometimes indicated to dry up the secretions. For the next eight or ten days the throat is sore on swallowing and particularly on taking sour drinks or eating anything that is either too hot or too cold. Cleansing gargles are used and antiseptic applications are made from time to time until the patient is well.

The complications. Complications may be classified into two headings—those which may occur at the time of the operation and those which may occur after the operation. Complications at the time of the operation may be due to sickness from the anesthesia, fright on the part of the patient, or from hemorrhage preventing further operative procedure. Neither one of these complications has so interfered with us in these two hundred cases as to prevent the removal of both tonsils. We have had seven cases which required some attention, either on account of fright or the anesthetic, but none due to severe hemorrhage. Of these, in only one case was it

necessary for the patient to lie down on account of feeling sick, and in this case by simply arranging the operating table and placing the gentleman on the table the operation was completed, and within a few minutes he was able to walk out of the room. He was a very nervous man who always had fainted at the sight of blood and had been for five years trying to muster enough courage to have his tonsils removed. It is a question whether his fainty condition, as he termed it, was due to fright or to the amount of cocaine used as a local anesthetic. Of the other cases, four were women of very nervous temperaments and one went to the operating-room saying she knew she could not stand the operation without ether. Their only symptoms were a fainty feeling associated with pallor. These regained their color as well as their courage after the administration of a teaspoonful of aromatic spirits of ammonia and bathing their faces in cold water, and all of them left the operating-room in a very much more cheerful condition than when they entered, having regained both their courage and their color. It is often a difficult matter to determine just how much of this partial collapse is due to fright and how much to the toxic effect of the anesthetic.

The after-complications consist of hemorrhages, peritonsillar abscess and neuralgia. Hemorrhages may be divided into primary and secondary. A hemorrhage within the first seventy hours may be considered primary. After this period they are usually termed secondary hemorrhages. In this series of two hundred cases we had four primary hemorrhages. Of this number it was necessary in only one case to ligate the bleeding vessel. We had three cases of secondary hemorrhages. Of this number in only one case was it necessary to sew up the tonsil cavity. In two cases in which I was called to see the patient on account of hemorrhage, it had stopped by the time I arrived and nothing was done further than to inspect the throat. In two cases of secondary hemorrhage it was necessary to use local astringents and simply place a piece of gauze with styptic solution in the tonsil cavity.

I had one case of peritonsillar abscess which occurred within eight days after the enucleantion of the tonsil. In this particular case the young lady wished to have her tonsils removed during her vacation. I had treated her ten days prior to this time for an acute follicular tonsillitis, and I insisted that it would be better to wait, but she was more insistent; hence I operated under protest and she protested afterwards. I had one other case of threatened peritonsillar abscess in a young lady who was operated under exactly similar conditions. She barely escaped peritonsillar abscess after a most vigorous asep-

tic treatment of her throat. After these two experiences, I would insist upon any patient waiting three weeks after tonsillitis before a tonsillectomy is done. There are three serious objections to operation upon a patient who has recently had tonsillitis. First, danger of after-infection; second, hemorrhage is always greater, and third, local anesthesia is never so complete in a throat that is inflamed.

The next complication is that of neuralgia in the throat. I had two cases of this character and, fortunately for the patients and the doctor, it is a most rare occurrence. However, I am inclined to think it often occurs when the operator knows nothing about it. The conditions of these two patients were very much the same. The symptoms were as follows: Within a few weeks after a perfectly performed operation and an otherwise successful result, the patient returns with a stinging, burning, lancinating pain at the lower anterior portion of the tonsil scar. This is due to the involvement of a tonsillar branch of the glossopharyngeal nerve in the tonsil scar. A branch of this nerve seems particularly apt to be so involved and cause this character of trouble. A possible injury to the main portion of the glossopharyngeal nerve might occur in this region. However, this did not occur in any of my cases. There was a report by Matthews of such cases last year in the *Journal of the American Medical Association*. When this does occur the patient suffers for a long time, if not indefinitely, from a severe drying of the throat and fatigue after singing or speaking. I had under my care last winter a young lady who had had an injury to both pharyngeal nerves during tonsillectomy and suffered intensely from a mucous discharge drying on the posterior pharynx.

Two hundred tonsillectomies under local anesthesia are not a great number of cases, but they are sufficient, when carefully considered, to justify some interesting conclusions:

First. The operation can be done without pain.

Second. Do not ever operate on a case which has had a recent acute tonsillitis.

Third. There is less shock, less hemorrhage and less fever under local anesthesia.

Fourth. The work can be more satisfactorily done and hemorrhage can be more easily controlled under local anesthesia.

Fifth. Many cases can thus be operated on who could not, on account of other conditions, take a general anesthetic.

Sixth. Local anesthesia is *the anesthetic* of choice in all grown subjects with very few exceptions.

1402 L Street.

OPERATIVE TECHNIC IN CIRCUMCISION OF THE TONSIL.

Dr. Frank G. Murphy, Mason City, Iowa.

Two and one-half years of experience with this operation has convinced the writer that the technic followed in its execution is of signal importance. That any operative procedure that has for its aim the disposal of the peritonsillar sinuses will meet with a fair degree of success is certain. With this in mind a more detailed description of the methods employed, than has been heretofore given, may be of help to those who have not attempted the operation, and who have not developed a technic of their own.

While the plica triangularis is as varied as the tonsil itself, the position is taken that in normal tonsils the plica has practically disappeared before birth and that the mucous glands of the faucial region rarely become infected when the plica has reduced to normal as has been shown in former communications.[1, 2]

It is of the greatest importance that adequate drainage be established in the peritonsillar fossae as the indications are that this is the source of our peritonsillar and systemic infections. It is also important to establish drainage of the tonsillar crypts as is shown in figure 4, when the palatal muscles are free to compress the tonsil at its base during deglutition. Where there is a persistent plica neither the tonsillar crypts nor the peritonsillar spaces drain normally. (Fig. 5.)

Drawings in Figure 1. These drawings illustrate a condition which at a glance would appear as if there were no tonsil at all. The tonsil is undeveloped or is in a condition of advanced atrophy and is entirely hidden by the plica that has retained its embryonic state and covers the greater part of the fauces. The white line diagonally across the plica in *drawing B* represents the dividing line between that portion of the plica that is adherent to the faucial wall below and the unattached part above that encloses the deep anterior faucial sinus. The black lines in C running parallel with the anterior pillar indicates that part of the plica removed by the U punch. The white dotted line indicates the removed attached plica below the white line and the unattached part of the plica above, all of which is removed by the Hartman punch. D shows the operation completed. The anterior fossa is no longer a culture tube for pathogenic bacteria that may infect the peritonsillar glands

whose ducts open into this area. The lower portion of the plica that partly overlaps the tonsil is closely adherent to the faucial wall and to the lower border of the tonsil and covers no mucous ducts nor tonsillar crypts which makes its removal necessary.

Drawings in Figure 2. After the cotton-tipped probe has been dipped in a 10 per cent. cocaine and 1:1000 adrenalin solution it is

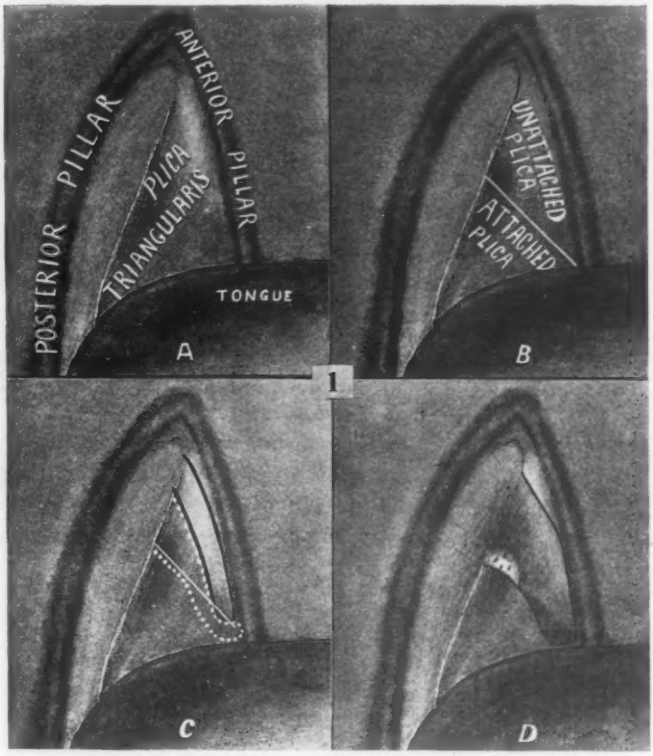

Fig. 1.

applied to the inner surface of the plica from the base of the tongue upwards covering the inner side of all the plica to be removed as in A. The cotton-tipped probe is then inserted in the supratonsillar fossa and the anterior fossa as in B, which is enclosed by the plica triangularis, and from this point the probe is carried down to the bottom of the anterior fossa. The cotton-tipped probe at the bottom

of the anterior fossa is in about the same position as it is in A, except that it is hidden by the plica. Usually there are no attachments in the supratonsillar fossa that require breaking down. The writer makes these applications to both sides of the plica every five minutes until from four to six applications have been made, when the field is ready for operation.

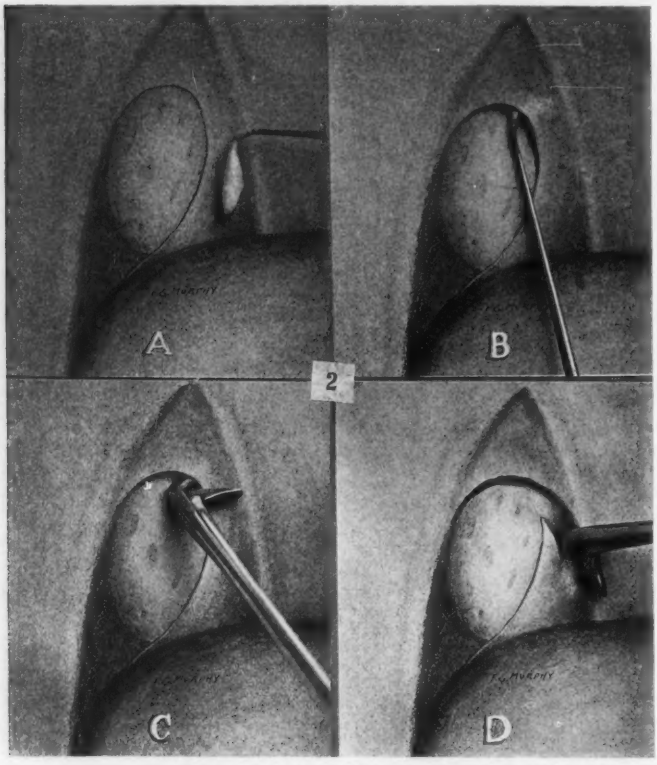

Fig. 2.

Starting with the U punch the writer thinks it is not usually necessary to remove much of the plica covering the supratonsillar fossa as that membrane rises when separated from its attachments, and sufficient drainage is established in that region. The incision by the U punch is carried forward and slightly downwards towards the anterior pillar as in C, and then to the bottom of the anterior

fossa as in D. It is then neecssary to search with the blunt-hooked probe behind the anterior pillar to be sure no pockets or attachments remain.

Drawings in Figure 3. A represents the work of the U punch completed, the incision having been carried down parallel with the anterior pillar to the bottom of the anterior sinus. The anterior

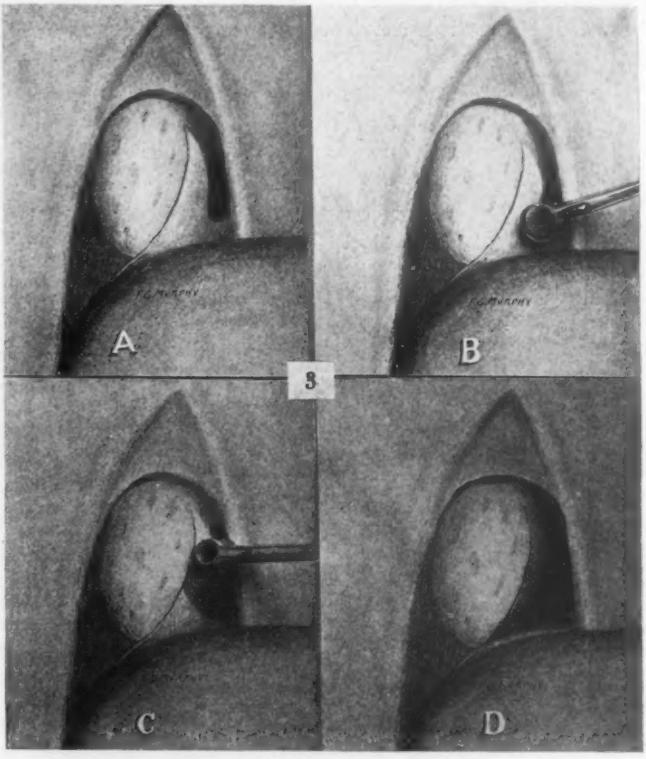

Fig. 3.

fossa does not usually reach to the base of the tongue; therefore, the remaining portion of the plica between the incision and the tongue is removed by the Hartman punch as in B. The writer thinks it is not necessary to always remove the plica as far as the base of the tongue except where the anterior faucial sinus is deep. In practically all cases, that portion of the plica that is adherent to the lower

lobe of the tonsil is removed for about one-fourth inch below the bottom of the anterior fossa and also for the same distance posteriorly as in C. In C there is a triangular portion of the plica remaining on the tonsil inferiorly and above the base of the tongue that the writer does not always remove except when the lower lobe of the tonsil is considerably developed as in this illustration. That portion of the plica that is in evidence above the punch in C is unattached to the side of the tonsil and should be removed entirely regardless of how large it may happen to be. D shows the operation

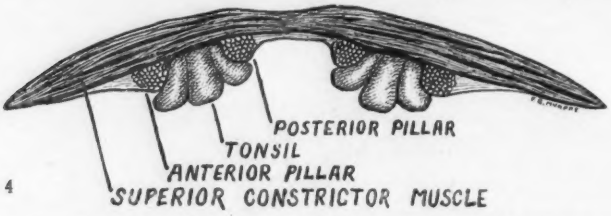

Fig. 4. Horizontal section of superior constrictor muscle and normal tonsils as in deglutition showing pillars constricting base of tonsils, milking the crypts. (Schematic.)

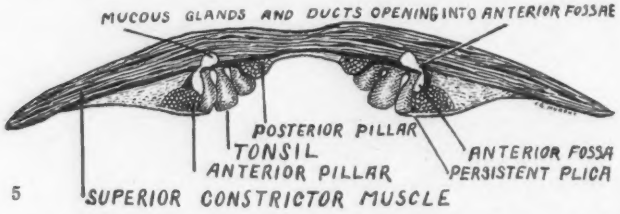

Fig. 5. Horizontal section through superior constrictor muscle on line with center of tonsils, showing anterior pillars riding tonsils on account of persistent plicae. (Schematic.)

completed except that an application of a 25 per cent. tincture of iodine is now made to the field of operation.

When it is not possible for the patient to report to the office for subsequent treatment, a half-ounce of the freshly made tincture of iodine is prescribed and the patient taught to apply it once daily for a few days. The patient is advised that frequent efforts to swallow is beneficial. It is best to have the patient report for inspection in a few weeks and should any attachments have formed that interfere with the drainage of the anterior fossa they should be broken down. However, if the work is carefully performed

there is usually little annoyance with adhesions afterward. After a persistent plica has been removed the buried tonsil begins to present itself between the pillars which is particularly noticeable the first week or two following the operation. The plica having been removed the superior constrictor muscle meets with no resistance in its efforts to force the tonsil through the palatal arch and the tonsil that appeared to be small may now show itself to be of considerable size.

In the normal tonsil and in those where the circumscision operation has been properly carried out the tonsil should be easily forced between the pillars by the superior constrictor muscle when the patient retches or gags and during deglutition as in Figure 4.

When there is a persistent plica the anterior and superior fossae become culture beds for pathogenic bacteria which infect the mucous glands and the anterior pillars ride the tonsil in deglutition, preventing drainage of the crypts. (Fig. 5.)

As soon as the tonsil begins to function normally old epithelial plugs begin to work out from the deep crypts and occasionally cause a little annoyance to the patient until the mass has been forced through the mouth of the crypt. It is best to explain this to the patient that he nor his physician friends may not misinterpret this effort of the tonsil to function normally for a pathological condition.

Several laryngologists have written that they felt that no matter how successful this operation might be, the fact that the tonsil remained would furnish opportunity for unprincipalled physicians to discourage the patient and convince him that a proper operation had not been performed. The writer's experience has been that the physicians who do not operate on the tonsil and who are unbiased in their judgment are friendly to the operation and no difficulty is experienced in doing conscientious and thorough work for their patients. The physician who operates the tonsils of every patient who will permit him to do so regardless of the pathological conditions found is an enemy to this operation as he is invariably a menace to scientific medicine in general.

The writer has, upon the advice of Dr. Robert S. McCaughey, internest to the Park Hospital, enucleated the tonsils in every case when the improvement in the patient's systemic condition did not meet his expectations, after a thorough circumcision operation had previously been performed, and so ar no improvement ater tonsillectomy has been observed. It seems to me that this is the most reliable test to make in determining the efficiency of the operation.

The fact that bacteria of a virulent type may be found in the crypts of the tonsils after the circumcision operation, is no evidence that their toxins are entering the circulation or that the pathologic tonsil will not become normal, after proper drainage of the crypts has been established. While the writer has for more than two years been convinced that the peritonsillar theory of infection is correct, the technic of the operation has presented the usual difficulties.

The morphologic variations of the plica are so marked and the development or atrophy of the tonsil so diverse that the technic of each operation must vary to some extent. The tonsillar conditions presented in *Figures 1 and 5* in the communication "The Plica Triangularis and its Morphologic Variations," appearing in the May, 1917, number of THE LARYNGOSCOPE, have been selected as the two best types to describe this operation because of the unreduced plica and the variation in the development of the tonsils.

1. MURPHY, F. G.: *N. Y. Med. Jour.*, 1917, V. cv., p. 785:
2. MURPHY, F. G.: THE LARYNGOSCOPE, May, 1917, p. 409.

The Park Hospital.

Changes in the Central Nervous System in Hypothyroidism.

F. W. MOTT, *Brit. Med. Jour.*, Feb. 24, 1917.

There is a universal chromatolytic change in the cells of the central nervous sytsem, sparing no system or group of systems of neurons entirely. The changes had been especially noted in the smaller cells of the autonomic nuclei (vagus and glosso-pharyngeal, for example). The cells of the olivary body showed much less change and the Purkinje cells of the cerebellum less chromatolysis than the large motor cells of the medulla oblongata, spinal cord and Betz cells of the cortex, and there was no increase in neuroglia. The nervous symptoms in myxedema point to a condition of exhaustion of nervous energy, consequently, upon the assumption that the basophil substance of the nerve cell is the source of nervous energy we should expect the above findings, namely a marked chromatolysis as revealed in sections of the brain and spinal cord by a partial or complete disappearance of the Nissl granules throughout the central nervous system. The author corroborated these findings in seven cases. ED.

OZENA AMONG THE VARIOUS RACES OF THE EARTH.*

Dr. J. N. Roy, Montreal, Canada.

Through extensive travels during the last ten years the writer has had the opportunity of coming in contact with the principal peoples of the globe and thus being in a position to study on the spot anatomical, physiological and pathological conditions, believes it of interest to publish his observations and conclusions in regard to ozena. To escape repetitions, and especially to remain on purely scientific grounds, we shall divide the peoples of the earth, from an ethnical standpoint, into three large families: the white, the black and the yellow. Indeed, if we consider carefully the characteristics of the Malays and the Redskins, we find that the representatives of those two races have had the Mongolians for ancestors. The color of their skin, the shape of their eyelids, the development of their malar bones, the flattening of the base of their nose, the thickness of their hair, and generally speaking, their general facial expression, are all arguments in favor of our theory. Moreover, we find in the language of certain Indian tribes of South America a number of expressions very similar to certain Japanese words, and inscriptions and writings, undoubtedly vestiges of those which adorned the shrines of Boudha are also often found in Mexican ruins.

We shall have little to say about the white race, as such a large number of articles on ozena have already been published; we simply shall draw some conclusions from what we observed in cross-breeds of white with either of the other two races.

The blacks are particularly interesting, and a careful study of them in Africa, America and Oceania reveals some very instructive facts. In the course of an extensive voyage around the Dark Continent, we examined the nasal cavities of nearly five thousand negroes, in twenty-two different colonies. On several occasions we penetrated into the interior of the country, a long distance from the coast line, and were in a position to visit about a hundred different tribes. After making a most careful and minute examination of those aborigines of Africa, all over the country, we may state, considering the large number that came under our notice, that they do not suffer from ozena. We made a particular study of those races

*Read before the "Congrès français d'oto-rhino-laryngologie," Paris, May, 1914.

which are not full-blooded or pure, as the Mulattoes, the Moors of Mauretania of Arab and particularly of Berber descent, the Peuhls, the Foulahs, whose ancestors were the Egyptian Fellahs, the Hottentots and the Bushmen, in whose veins there is a certain quantity of Mongolian blood, the Danakils, Somalis and Gallas, of mixed Arab breed, and finally the Abyssinians who at various periods of their history were often in close contact with the Egyptians. All these peoples showed no signs of atrophic rhinitis. This disease is also unknown among the negroes we examined in Oceania and in the West Indies, and we had to return to the American continent to find it.

During our stay in Brazil, where three-quarters of the population is black, in Central America and in the United States, we were surprised to find a large number of cases. We discovered it in pure breeds as well as among the Mulattoes and the Zambis (the offspring of negroes and red-skins).

Our excellent confrères, Doctors Chardinal (of Rio de Janeiro) and Jones (of Newport News, Virginia) also found a number of blacks afflicted with ozena. Their findings show that the disease appears to be less prevalent among the negroes and mulattoes than among the white and yellow races, and we are entirely of that opinion. Their mucous membranes in general are very resistant to infection and it requires a prolonged contact with very virulent microbes to cause a disease.

The yellow race of Asia and its different ramifications which spread practically all over the globe are particularly predisposed to atrophic rhinitis. We found it not only in the Chinese and Japanese, but also in certain Indo-Chinese of Mongol cross-breed, in the Esquimos, the Laplanders, the Finlanders, the Malays, the Philippinos, the Hovas and the Redskins. The frequence of the disease varies according to certain conditions which we shall try to explain now in studying the causes of ozena among the different races.

Contrary to the opinion expressed by F. Fraenkel, Gottstein, Couetoux, Boulay and many other authors, who believe that ozena is preceded by a pre-atrophic hypertrophic rhinitis, we agree with Bosworth that such is not the case. We examined the Chinese in their own country, in tropical climes and in cold countries such as Canada in winter, and we did not find that climate was a factor in the frequency of the disease.

By studying a large number of cases we found, generally speaking, that Mongolians have a tendency to atrophy of the anterior third of

the inferior turbinal without any pathological symptoms. This is particularly evident if they reside in a hot climate; and in colder countries we find they suffer from hypertrophic rhinitis, though not as often as whites. The Indians of the American continent are predisposed to that kind of atrophy, which is also found in a lesser degree in the cross-breeds. In none of the cases does the enlargement of the inferior turbinal seem to have any influence on ozena, the frequency of which varies according to the more or less contaminated surroundings. Moreover, the African negroes often suffer from hypertrophic rhinitis if they live in a cold, damp clime, though they do not show any lesions in their own country. We were astonished at the frequency with which we observed the deviation of the septum in the yellow race and especially in the Indians, among whom we found it in no less than forty per cent of all those we examined. This malformation is also more frequently found in the cross-breeds than in whites.

We scarcely ever found compensatory hypertrophic rhinitis in the largest side of the nasal cavities in the Mongolians; more often we observed the presence of a muco-purulent discharge with a crusty deposit devoid of odor. This corresponds to a state of pseudo-ozena. In cases of true ozena we found the odor weaker and less repulsive than in whites and blacks. We draw particular attention to this fact and believe it to be due to a physiological increase in the quantity of the nasal secretions proper to that race, which prevents the drying of pus and thus shortens the life of bacteria and partly prevents the formation of their toxines.

The deviation of the septum in the Mongolians, combined with the formation of non-ozenous mucosities in the much-expanded nasal cavities, is an argument against the theory expressed by Zaufal, who states that atrophic rhinitis is found in those individuals who possess very large nasal cavities, where the weakness of the air draughts allows stagnation and decomposition of the secretions. On the other hand, the negroes—scarcely ever showing any deviation or spurs of the septum—have the arch of their palate lower than in the white and yellow races, the nose flat and broad, with wide nostrils, and in Africa they do not suffer from ozena.

We shall not bring forward arguments to offset the theories of epithelial metaplasia sustained by Siebenmann or against Zarniko's theory of tropho-neurosis, or that of osteo-malacia of Cholewa, of primary infection of the sinus, as advanced by Vieussens-Grundwall; we shall simply repeat that there is no atrophic rhinitis to be found

among the natives of the Dark Continent. The same may be said about tuberculosis which also exists in those countries.

The infection theory of ozena appears to be the only one which will satisfy every demand. We do not intend to discuss again, as it has already been done on several occasions, the value of the capsulated cocco-bacillus of Löwenberg, of the pseudo-diphtheric bacillus of Belfanti and Della Vedova, and of the small bacillus of Pes and Gradenigo. We believe the cocco-bacillus of Perez (of Buenos Ayres) is really the specific vehicle of the infection, since experiments conducted in the laboratories confirm and prove that theory. The cocco-bacillus when injected into the circulation of an animal is the only one which causes atrophic rhinitis with the characteristic odor of ozena. The other microbes found in the nasal cavities only act as secondary agents.

After examining in both Americas a multitude of Indians belonging to twenty-seven different races, and a large number of cross-breeds, we observed that local conditions and surroundings cause a more or less frequent appearance of the malady. Rare enough in those parts of the country where the natives live on high ground scattered in the open air, the disease is found much more frequently in the towns and on the plain where they live under more congested conditions and breathe impure and contaminated air. Among the latter we even found the disease in about six per cent of the population, and as the women are more confined to their homes and live in a more secluded manner than the men, they are more often infected. We observed the same conditions in Malasia, China and Japan.

Redskins and cross-breeds are equally infected by ozena; still, the yellow race appears to be more susceptible to the disease than the white. We believe the reason for this condition is to be found not only in the filth some of the Mongolian races are addicted to, but also to the want of symmetry in their nasal cavities. The deviation of the septum which we observed very often in them, naturally causes respiratory defects and a greater abundance of stagnant secretions than in the whites—with equal lesions—and the bacillus of Perez finds a field quite prepared for its culture and development.

In Madagascar, our excellent confrères, Dr. Fontoyront and Dr. Roton, were kind enough to show us some cases of true ozena among the Hovas. It is interesting to note that that race, which is of Malay descent with a slight mixture of Hindu blood, is the only one which shows any susceptibility to the infection, though they come in fairly intimate contact with the negroes who do not yet suffer from that disease.

That ozena is distinctly of microbic origin is most conclusively proved by observations in Africa. Of all the blacks we examined in that vast continent, not one was infected. Not even among the natives of mixed descent whose ancestors may perhaps have suffered from the disease which probably disappeared through the purifying agency of the sun's rays, in a sand-covered tropical region. And yet, when removed from the slave coast to Brazil—to an equatorial clime, similar to that of their own country—these negroes in contact with the infected aborigines, soon become infected themselves. When transplanted to the northern parts of South America, into Central America or to the United States, they brought the disease with them or contracted it in these countries. Their mulatto or Zambi descendants in turn were infected, and according to statistics, these blacks are more often contaminated than those of pure blood. This is probably due to their closer and more intimate connections with the white and yellow races, and also to the heredity of the diathesis of the later, which in a general manner reduces to a great extent their power of resistance.

It is thus very evident that the blacks are not immune to ozena, and it will be interesting to know how long Africa and Oceania will remain free from contamination, and particularly the West Indies, which would seem to be more exposed to the infection since they are inhabited to a great extent by mulattoes who often visit the American coast.

Now, if we are allowed to draw certain conclusions from the observations we collected from all quarters of the globe, we may say that ozena is an infectious disease and is found in all races. Yet, the disease is less frequent among the blacks than among the whites, and is most prevalent among the yellow race. The marked deviation of the septum on these latter, to which we must add their state of habitual uncleanliness and nasal irritation, produce in their mucous membrane a splendid breeding-ground for the microbes.

The blacks of Africa, Oceania and the West Indies are not yet infected, although they are susceptible to the disease and the small number of Europeans who came under our notice—and they were not afflicted with ozena—does not allow us to express an opinion as to the future appearance of the disease in those countries.

277 Rue St. Denis.

AN UNUSUALLY LARGE POLYPUS OF THE ETHMOID.*

DR. HENRY B. ORTON, Newark, N. J.

The unusually large size of this nasal polypus originating in the anterior ethmoid cells and completely filling up the left nasal cavity and not extending into the nasopharynx I think warrants reporting this case.

J. D., 61 years, white, male, married, came to my office Nov. 23, 1916, complaining of his inability to breathe through his nose, which necessitated his sitting in the upright position at night to enable him to get air. He has had an occasional headache and a purulent discharge from the left nostril.

His family and personal histories are negative, except that he had some polypi removed from his left nostril twenty years ago.

On examination I found a deviated septum with its convexity toward the right; left nostril occluded by the mass. A chronic epi- and granular pharyngitis with an hypertrophied and slightly edematous uvula. Transillumination was negative.

On post-rhinoscopic examination the posterior end of this mass could be seen occluding the entire left choanal opening. On dilating the left nares anteriorally I was able to trace the attachment of this growth, by means of a probe, with a certain degree of proximity to the anterior ethmoid cells.

Under cocain anesthesia a cold wire snare was placed over this mass, getting as much as possible within the loop before tightening the snare. The idea was to remove as much as possible so as to give more subsequent space not thinking for a moment that I would be able to evulse the entire mass at once.

However, to make sure that the snare would not slip, gentle traction was made. There was a sudden cracking sound. The patient exclaimed that I was pulling his eye out. The mass was removed and measured four inches long, one and one-half inches wide posteriorally, one and one-half inches wide anteriorally and one inch in thickness. In the center (A) is the point of attachment to the anterior ethmoid region, showing clearly a few of the cells. There was quite a profuse momentary hemorrhage which ceased in a few moments of its own accord without even packing.

*Reported to the Nose and Throat Section of the Academy of Medicine of Northern New Jersey, December, 1916.

On inspecting the nasal cavity afterwards the left middle turbinate was absent, either removed at the previous operation twenty years ago or it had disappeared by absorption. A number of the anterior ethmoid cells were open.

There were no other polypi anywhere to be seen. The whole mass was removed in toto. The growth looked very much like adenoid tissue and I thought possibly it might have been a polypo-adenoma.

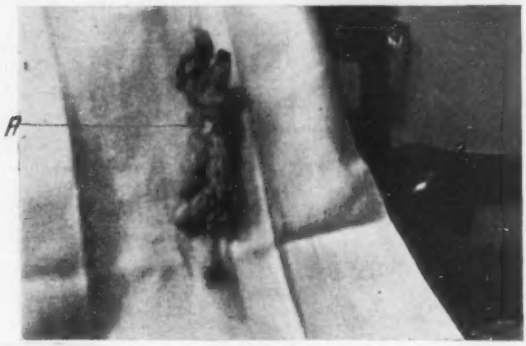

Fig. 1.

The report from the pathologists stated that the growth from the ethmoid shows it to be a polypus with edematous and inflammatory products, showing no malignancy.

The accompanying picture gives a fair idea of the contour of the growth, it being the largest entirely nasal polypus I have ever seen. The man made an uninterrupted recovery.

671 Broad Street.

Acute Exophthamos in Quincke's Disease. MEYER HEURLIMANN, *Correspond.-Blatt f. Schweizer Aerzte*, Feb. 10, 1917.

Patient a woman 51 years old. Disease characterized by acute circumscribed swelling of the face, ear, leg, soft palate and pharynx, edema of larynx, sudden starting and ceasing diarrhea, and great exophthalmos first of one and then of the other eye. There was no fever. The attacks were recurrent, each lasting from one to fourteen days. General condition not much affected. ED.

A CASE OF TRAUMATIC APHONIA.

DR. THOMAS A. CHEATHAM, Birmingham, Ala.

On Jan. 19, 1917, Mrs. A., age 21, a telephone operator, suffered from a neuralgic pain of increasing severity in the region of the larynx. Suddenly her voice failed and she found it impossible to even whisper. There was no preceding hoarseness or "brassiness." Dr. D. C. Donald was consulted and as there was some dyspnea, the patient was sent home and put to bed. The condition became progressively worse and the writer was called in consultation that night.

Examination revealed moderate edema of the glottis and epiglottis, mild hyperemia of the vocal cords, the usual tendency to spasm occasioned by examination without an anesthetic but nothing severe enough to account for the then existing severe pain, marked dyspnea and moderate shock. A local application of argyrol was made and a cathartic prescribed.

The following day dyspnea became alarming and the patient could not breathe in any but the sitting position. Examination revealed practically the same condition as when first seen.

On the second day, after a sleepless night, the patient vomited a half pint of dark brown blood and, feeling something sticking in the back of her throat, indicated this to her sister, who investigated and extracted from the soft tissues of the pharynx, a needle two inches long. The patient could not account for the presence of the needle. Dyspnea and a severe griping pain in the epigastrium immediately became so alarming that surgical intervention was seriously considered and the patient sent to the hospital at once.

Here an x-ray was made and no other foreign body found. The patient became progressively worse and for two days it seemed, at times, impossible to avoid an intubation or laryngotomy; however, by the use of morphia gr. ⅛, hyoscine gr. 1/200 and apomorphia gr. 1/40 at four-hour intervals, the patient would relax and breathe easier just when a radical procedure seemed imperative.

On the sixth day the patient, on awaking, though still suffering from pain in the epigastrium, could speak and suffered less from dyspnea; could speak distinctly on the seventh day and was sent home on the ninth. A week later she returned to her work and complained only of mild epigastric pains.

As there was no history obtainable concerning the needle, there was no way to account for the severity of the symptoms before the second day when the needle was vomited. A diagnosis was not attempted. The patient was a well-nourished, sensible, good-natured woman, devoid of any tendency to hysteria or "nerves." A Wassermann was negative. This, together with the sudden onset seemed sufficient to exclude aphasia.

My conclusions are that the needle had been swallowed several days previously, unnoticed by a mentally preoccupied and very busy "Central;" had remained in a harmless, lengthwise position for a while then, during a cough or while swallowing, had penetrated the pharyngeal mucosa making, probably, many puncture wounds, causing marked irritation which could account for the preliminary pain, then finally penetrating to and puncturing or severing the recurrent laryngeal nerve causing sudden loss of function in the vocal cords. The severe griping pains in the epigastrium and vomiting of blood may be accounted for by the presumption that the needle became dislodged from the laryngo-esophageal site and passed on to the stomach, causing more puncture wounds and consequent bleeding followed by reflex vomiting and the expulsion of the foreign body. That the gastric walls were not only irritated but injured is evidenced by the fact that dark brown blood was vomited on several succeeding occasions and the stomach refused to retain food until the eighth day. Epigastric pain was the most persistent of all symptoms.

At no time did the patient have a rise of temperature or show signs of pulmonary involvement although the x-ray showed distinct cicatrices of pre-existing chronic pulmonary lesions involving all lobes but most marked at the apices.

234-235 First National Bank Bldg.

Simple Ulcer of the Esophagus. J. B. CHRISTOPHERSON, *Lancet*, March 10, 1917.

The patient was a man 36 years old who died of hemorrhage from the esophageal ulcer perforating into the arch of the aorta. Necropsy showed two other ulcers both situated in the cardiac end, one of which had already healed by cicatrization and the other, a larger one, in the process of healing. ED.

THE CONTROL OF BLEEDING IN TONSILLECTOMY.

Dr. William Dwyer, Hartford, Conn.

All other factors being equal, the amount of bleeding during the removal of tonsils decreases as the depth of anesthesia (general) increases. This is due to the fact that during a very light anesthesia, the patient frequently gags and retches—massaging the blood out of the cut vessels. As the stage of anesthesia is deepened the above factors disappear. The contraction of the muscles during swallowing works in the same way and gives increased flow of blood from points already bleeding, or starts up new ones.

An appreciable amount of blood may be saved for the patient by having him fairly well under the anesthetic before beginning the operation. A light anesthesia gives the patient less shock than a deep one, but the increased loss of blood offsets any gain from a smaller amount of ether. It is not intended to convey the idea that a very deep stage of etherization should be employed—rather one where the gagging, retching and swallowing are just lost.

With the Sluder method I have had more bleeding than with dissecting. This I have thought to be due to increased tendency to clotting being caused by the slight traumatism to the surrounding tissues in dissecting. This traumatism is absent in removal by the Sluder method.

The use of suction during the operation is a great advantage. It prevents the blood being swallowed or inspired and gives a clear view of the field of operation. The suction should not be applied directly to the tonsillar fossa as it obviously will result in increased bleeding. A clear field may be obtained by using suction at the post-pharyngeal wall and the margins of the pillars. All blood in the fossa itself should be removed by gauze sponges, held in sponge forceps, care being taken to merely touch the spot in question and then withdraw. Wiping or twisting the sponge around on this point will increase the bleeding.

The majority of bleeding-points can be controlled by making pressure with one of the gauze sponges, pressure only slightly greater than the patient's blood pressure being all that is required. This may take from a few seconds to a couple of minutes.

Adrenalin applied to the sponges will give quicker and more complete results at the time, but, after the effect of the adrenalin has worn off, bleeding will return in a certain number of cases—sometimes after a patient has been returned to his room. Therefore,

although it takes a little longer during the operation, it is better to use dry sponges.

When pressure applied for a short time does not stop the bleeding, it is best to tie the bleeding vessel. Ligatures work well, but are hard to place and may slip off afterwards. With practice it is not hard to suture the bleeding-points. No special instruments are required, simply a flat-jawed needle forceps, some full-curved needles and a Carmalt clamp. Number zero iodin catgut does very well for the suture material. Eighteen inches is a convenient length. It saves time to have a needle threaded on each end of the suture material.

To tie the bleeding-point, retract the anterior pillar and sponge in order to locate the exact point. Catch it with a Carmalt clamp including just as small an amount of tissue as possible. Then, with a small, full-curved needle held in a needle forceps and threaded with the iodin catgut, take a stitch just above the clamp, but as near the points as possible, introducing the needle anterio-posteriorly. If slight traction is made with the Carmalt clamp while introducing the needle, the tissues will be tented outwards, towards the center of the throat and it will be possible to include only a minimum amount. Now, taking the needle on the other end of the suture, make a similar stitch below the clamp, towards the tongue, again going anterio-posteriorly. The clamp is now removed to give more room in tying. When it is tied you have a purse string around the point in question and bleeding from that point will be impossible. If care is taken not to include too much tissue, there is no distortion. It is unnecessary to remove the sutures as they are absorbed in a few days.

It is very important to make traction on the Carmalt clamp while introducing the needle each time. It should be just sufficient to tent the tissues slightly. This lets the point of the needle escape instead of following around to the edge of the posterior pillar.

The position of the needle in the needleholder is also important. The flat plane of the needle should coincide with the flat plane between the jaws. The needle should be grasped near the eye and with the line between the eye and the point parallel to the line of the axis of the needleholder.

Familiarity in placing sutures can easily be acquired and then bleeding-points can be controlled much quicker and more efficiently than by pressure. All bleeding should be stopped before the patient leaves the operating table. Even slight oozing may persist and, if it continues long enough, result in serious loss of blood.

On the return from the operating-room and during the first few hours afterwards, the patient should be lying face downwards, or rather, on his abdomen with face sideways. No pillow should be used. Then, if any oozing occurs, the blood will run out onto the sheet and show at once. On the other hand, if the patient is lying on his back, he may start bleeding, but quietly swallow the blood, and the first sign may be the vomiting of a great quantity of blood or the rapid pulse, pallor and other signs of severe hemorrhage.

Occasionally, in spite of all precautions, hemorrhage will occur after the operation. If the main points have been sutured and the patient left the table dry, the bleeding can be controlled by pressure with a gauze sponge for a couple of minutes. Inspection of the throat will show a clot in the fossa which is bleeding. This should be removed before any attempt is made to stop the bleeding. It should be picked out with an artery forceps, and, when the fossa is clean, the pressure made.

In a very few cases there will seem to be a general oozing. Then a gauze sponge inserted between the pillars and held in by a couple of sutures through the edges of the pillars will control it. The sponge should be left in for twenty-four hours. When there is persistent oozing, examination of the blood may show prolonged bleeding time. If this is found to be the trouble, calcium salts by mouth or whole blood injected into the buttocks or even transfusion is indicated. The history taken before operation will exclude "bleeders."

When bleeding is present after the patient is returned to his bed, differentiation between adenoid and tonsillar bleeding is quickly made by having the patient lie face downwards. Adenoid bleeding will result in blood coming from the nostrils; tonsillar from the mouth.

Adenoid bleeding. After removing the adenoids, rubbing the naso-pharynx with gauze wet with alcohol will remove any small tags. Then pack gauze into the naso-pharynx with the fingers. This, if left in for a couple of minutes, will materially reduce the amount of blood which would otherwise be lost. Care must be taken not to make undue pressure on the soft palate during the packing, or some distortion will result, lasting for a few days. Suction is used to remove any blood which enters the throat. Bleeding from the adenoid region after leaving the operating room is best stopped by a post-nasal pack, which is kept in for an hour or so. If bleeding is still present, the pack should be re-introduced and left in for twenty-four hours.

18 Asylum Street.

THE LINGUAL TONSIL: GENERAL CONSIDERATION AND ITS NEGLECT.*

DR. HERMAN B. COHEN, Philadelphia, Pa.

I hesitate considerably in reviewing this subject with you and I hope you may not think that it is with any presumptuous idea of teaching you anything. It is rather to bring strongly before you this apparently unimportant structure in its influence, association and causation in many of the symptoms complained of by patients with throat trouble.

It is one of those structures that is not seen by direct inspection but requires the aid of the laryngeal mirror and unless a point is made to examine this organ many cases will remain unimproved or unrelieved of their symptoms. Before reciting the synopsis of several cases, I will delve but lightly into the general consideration of this tonsil, known as the fourth member of the pharyngeal ring or the connecting member of the so-called Waldeyer's ring.

Anatomy and embryology. The lingual tonsil is not as confining as the faucial tonsil and is situated antero-posteriorly from the circumvallate papillae to the epiglottis on the base of the tongue, projecting backward so that when the structure is enlarged it may touch the tip of the epiglottis. On either side they are in close proximity to the inferior poles of the faucial tonsils. The tonsil consists of lymphoid nodules commonly arranged in groups of two or three nodules, prominent and contiguous, extending laterally from either side of the central line, making what might be termed a right and left lobe. This central line is known as the glosso-epiglottic ligament. The number of nodules vary, as shown by Ostman, from 34 to 102, averaging 66. The size varies from one-half to six millimeters. They rest on a basement membrane of fibrous tissue analogous to the capsule of the faucial tonsils; but never so compact or so developed as that tissue. A lateral section shows the nodules as discrete hemispheres, the mucosa at the bottom of the meager intervals between them being free from lymphoid tissue, each presenting two or three crypts. The epithelium is like that of the faucial tonsils, stratified and squamous; the lymphoid tissue differs in no way from that of the faucial tonsils. Its arterial supply is from the dorsal lingual branch of the lingual artery. The veins which are an important part in the practical consideration, are part of the plexus draining the tongue. The dorsal veins form a submucous

*Read before the Logan Medical Association, March 16, 1917.

plexus on the back of the tongue and above the larynx and joining those of the pharynx and faucial tonsils. The lymphatic drainage joins a multitude of pores throughout the tongue and empties into the supra-hyoid glands and the submaxillary and deep cervical glands. Situated in the posterior third of the tongue, it receives its common sensation fibers from the glossopharyngeal and superior laryngeal of the vagus.

We are indebted to the research work of Wyatt, Wingrave and Rosenberg for the careful and detailed accounts of the developmental origin of the tongue. They found that the two portions of the tongue have different origins, the sulcus terminalis being taken as the division between the oro-glossus and pharyngo-glossus. The part behind the pharyngo-glossus contains the lingual tonsil. This difference of origin, though the two parts are in immediate connection, explains why the anterior portion differs completely from the posterior portion anatomically, physiologically and pathologically. According to Piersol, the development of this tonsil occurs in the last two months of fetal life, the faucial *anlage* appearing at the fourth fetal month. This is corroborated by Bickel, who further states that the lingual tonsil is the last to undergo atrophy as the child ripens into womanhood or manhood.

Physiology. Being similar in structure, we must assume a similar function to the lingual tonsil as to the other lymphoid glands. To act as a filter for the afferent lymph current and the production of lymphocytes are its functions. Its chief function, therefore, is one of protection similar to that of its neighbors. A similar indictment may be decreed upon the lingual tonsils as upon diseased and hypertrophied faucial and pharyngeal tonsils, namely, that they are only protective agents and normal anatomically when free of disease. G. Lewis, in 1863, was the first to call attention to the clinical aspect of the subject, though Betz, in 1879, was awarded this credit.

Diseases. The diseases of the lingual tonsil are similar to those of the faucial tonsil but usually of milder form.

Acute catarrhal inflammation (acute lingual tontillitis). This condition is the same as in the faucial tonsils and often accompanies the latter.

Chronic retention in the crypts rarely occurs, as can be understood by the free and open drainage; therefore, from the point of view of systemic infection the lingual tonsils are not as important as the other members of the tonsillar group.

Hyperkeratosis frequently occurs with symptoms of pain resulting from contact.

Abscess formation beneath the capsule occurs and is therefore similar to peritonsillar abscess.

Acute edema is seen in acute anginas and associated with laryngeal edema.

Mycosis; leprosy; tuberculosis; lues; varicose veins and *hypertrophy* are other conditions which may affect the lingual tonsil.

I mentioned varicosity and hypertrophic conditions last because they are by far the commoner affections and I wish to dwell a little more on these conditions.

Varicosities consist of dilated and tortuous veins arranged in an irregular fanlike shape over the base of the tongue. According to Vernuil, superficial varices only make their appearance when the deep varices have acquired a certain development. According to Escat, who fathered the above fact, "Many kinds of neuralgias otherwise inexplicable, are to-day attributed to circulatory troubles in the satellite veins of the nerves and to a consecutive neuritis." Quenu has thus explained certain neuralgias. The trunk of the lingual nerve, the evident seat of glossodynia, is in effect, according to Fourcher, accompanied by a satellite vein and according to Zuckerkandl, even by two such veins. This anatomical fact is held by Escat to support this hypothesis and that of Piotrawski that all neuroses in this situation may be attributed to superficial and deep varices. Varix is a frequent accompaniment of hypertrophy and is a true manifestation of a disturbance of the circulation. Infectious inflammation of the pharynx and faucial tonsils and infection of the lymphoid tissue of the lingual tonsil are additional etiological factors. Browne believes that a constitutional or acquired debility of the vasomotor system is the chief cause. Some cases are reported as occurring at the menopause. Other etiological factors are constipation, hepatic cirrhosis and chronic intestinal disturbance. Do these apparent causes of varix of the lingual tonsil prove a disturbance of the circulation to be the underlying factor? May I emphasize what has already been suggested, the resemblance or the analogue between varix of the tongue and rector hemorrhoids?

Symptoms. The symptoms of the two conditions are practically alike with a few special symptoms depending upon the degree of hypertrophy and varicosity, also upon the underlying cause. I shall not attempt to divide them into groups such as local and reflex, as several of the symptoms are the result of a vicious circle.

The symptoms in the order in which they are more often complained of, are: cough, foreign body sensation, paresthesia, voice changes, hemorrhage and respiratory distress. In inflammatory con-

ditions there is constant pain at the root of the tongue, irritation of the structures at the entrance of the larynx giving rise to frequent coughing. There is also pain on swallowing referred to the base of the tongue and region of the hyoid bone. You will recall from the earlier part of the paper that the reason for this would be the lymphatic drainage in that direction. The glands are swollen and red and specks of lacunar exudation are present. Abscess may result following this condition but it is rather rare. Lingual quinzy, if this term may be used, is less common than faucial, but when it occurs edema of the glottis is also present. I shall later quote you a case of this condition. Hemorrhage is a frequent symptom of varix. It is rarely profuse but is sometimes present on arising in the morning. With each succeeding hemorrhage the varicose condition is increased and thus a vicious circle is established. Hemorrhage from here does not produce anemia, but Dickson lays important stress on hemorrhage in this region and considers it of diagnostic importance in hemorrhagic lesions of the brain and sometimes in cardiac weakness. As a reflex symptom cough and foreign body sensation may be mentioned. Symptoms of glossodynia or even imaginary ulcer of the tongue may result. Loss of taste may follow from a fibroid change of the lingual tonsil.

The neurotic element is highly demonstrated in those individuals. The slightest depression or exhaustion of the nervous system will bring forth the symptoms prominently which are otherwise not manifest in those patients whose nervous organism is well balanced. Globus hystericus is frequently due to some lesion of the lingual tonsil. Paresthesia may vary and may even approach a state of hysteria. Dynspnea is more often due to nervous stimulation than to actual obstruction. Cases where the tip of the epiglottis has been imbedded into the linguas mass have been reported. Hhy therefore, cannot attacks of asthma be brought about by disease of the lingual tonsil? As a matter of fact, Casadesus reported a case of nocturnal asthma cured by the cautery applied to the lingual tonsil. Severe paroxysmal dyspnea has frequently been cured by local treatment. Diseased lingual tonsillar tissue is a dominating factor in the etiology of recurrent colds. The barking cough of puberty is a frequent occurrence due to slight enlargement of this tonsil. The cough is hard, sharp, metallic, ineffectual, and without other respiratory lesions and is not relieved by the usual remedies. This constant, irritating cough is sufficient to cause impairment of health and give our patient great mental anxiety from his belief that he has tuberculosis. Twenty to twenty-five per cent of the pathological changes

in the lingual tonsil occur in professional voice users (clergymen, lawyers, school teachers, stock brokers, auctioneers, singers, etc.) The symptoms will vary if the condition is present in the basso voice; the voice will be less impaired than if present in the soprano voice, where the epiglottis is more erect and less apt to come in contact with the diseased lingual tonsil.

Of the tumors in this region or those arising from the lingual tonsil there are fibroma, papilloma, angioma, cysts and lipoma. Accessory and aberrant thyroids in this region have aloso been reported. When an accessory thyroid is present it may be mistaken for hypertrophy of one of the lingual nodules but the thyroid is then centrally situated at the site of the foramen cecum and is different in appearance from the lingual tonsil.

A malignant growth may make its seat in the lingual tonsil, though rarely as a primary growth as compared with the faucial tonsil.

The acute infectious diseases in childhood and especially those associated with throat lesions (diphtheria, scarlet fever, influenza and whooping cough) play an important part as predisposing influences in the production of hyperplasia of this gland.. Grippe or influenza shows a special predilection for the mucosa of the upper air passages.

Syphilis produces hypertrophy as does also bronchitis. Tuberculosis may be present as an associated condition of the diseased lingual tonsil or it may appear as a primary lesion.

Hypertrophy or marked hyperplasia occurs in middle or adult life but is seldom seen in children. The youngest case on record is reported by Hickman of a child who died of asphyxia at birth. Autopsy showed that death was caused by the enormous hypertrophy of the lingual tonsil. McBride reports a case of a child seven years of age. Oppenheimer's report shows that 20 per cent of the hyperplasia cases under his care seeking relief were between 30 and 40 years of age. Lennox-Browne of London found hypertrophy and varix more frequent between 25 and 40 years of age. Clark thinks hypertrophy is more common between 18 and 35 years while Johnson of Coffeyville, Kansas, found hypertrophy between 30 and 45 years of age.

As to sex, practically all men have found the hypertrophy to be more common in the female. Varicose conditions have been found by Phillips to be more common in the male sex. I should like to call attention to what might be called a coincidence, namely that neuropathic reactions are more often expressed by females. There-

fore this factor will help make the number larger as they are more apt to seek relief.

Earlier in my paper I referred to the etiology of hypertrophy of the lingual tonsil. Ballenger, in his text-book, states: "It is probably caused by repeated or continued infection of the lymph structures of the pharynx, fauces and pharyngeal tonsils. I should like to broaden this statement and add, that the repeated or continued infection may come from two sources: Infectious and constitutional diseases; from repeated contact of surrounding structures and the intake of irritating foodstuffs, acids and gases. To substantiate the latter remarks, we find many cases of hypertrophy of the lingual tonsil in people who are fond of condiments, excessive hot and cold foods, alcoholics, etc. These all have an irritating effect and help to keep up the pathological condition, at the same time aggravating the symptoms already present. Another point: In hypertrophy without symptoms the lingual tonsil may at the menstrual period become congested to such an extent as to give rise to all the symptoms of dysmenorrhea. I shall later quote a case bearing out this point. Ellel reports a case where the cough and other symptoms complained of were absent between the menstrual periods. What can we conclude from this fact? May I suggest that in pregnancy where the persistent cough cannot be explained it would be well to always look for hypertrophy of the lingual tonsil.

Treatment. The general treatment consists in the removal of alcoholics, tobacco and irritating or hot foods. Tonic treatment alone is of little use and should not be depended upon. Sajous was accustomed to give small amounts of potassium iodide and mercury even in non-specific cases and has found the treatment of considerable help.

Locally the following may be tried: *For varix,* adrenalin, cocaine or eucaine, silver nitrate in varied strengths from 12½ to 25 per cent. Stronger solutions should be avoided. This drug or the cautery should be tried in slight hypertrophic conditions. Menthol in olive oil, 15 grains to the ounce, or glycerotannin should also be tried and are of considerable value. Other agents are trichloracetic acid, chromic acid beaded on a probe and passed over the tissue. Two mixtures that I have used and am fond of, both for hypertrophic faucial as well as hypertrophic lingual tonsils are: (1) *Glycerole of iodin.* Iodin, grs. 12 to 16; potassium iodide grs. 24 to 32; glycerin, one ounce. (2) *Tincture of iodine* one drachm to the ounce of glycerotannin. These mixtures are not original but I have good results from them, especially with the latter mixture.

After a course of treatment two or preferably three times weekly, for about three weeks, with little or no improvement, we should consider the operative means. A large pair of curved scissors may be used but I do not consider these as satisfactory, at least in my hands, as the lingual tonsillotome. When operating for the removal of the lingual tonsil, the same rule applies as in the operation for the removal of the faucial tonsil. That of course is the complete removal, as far as is possible, of all lymphatic and teat-like projections. When a few are left remaining especially in the median line, they are apt to keep up a local irritation and set up or retain the previous reflex cough.

For varicose conditions associated with hypertrophy, the hypertrophied tissue may be removed by scissors or by tonsillotome. Even better in such cases would be the galvano-cautery.

For after-treatment I have followed what Ballenger suggests, viz., massaging the wound with a cotton applicator dipped in a mixture of equal parts of glycerin, tincture of iodin and tincture of chloride of iron at intervals of twenty-four hours.

For abscess formation at the base of the tongue involving the lingual tonsil, the treatment, of course, is free incision, followed by hot alkaline gargles.

For acute edema numerous scarifications preceded by cocaine and adrenalin locally.

For acute catarrhal lingual tonsillitis and mycosis, local applications of 12½ to 25 per cent of silver nitrate.

Let me now cite you a few cases with what I call typical symptoms which should make an examination of the lingual tonsil a necessity, if the physician desires to do justice to himself and to his patient.

Case 689. (M. C. Hosp.) Hypertrophy of the lingual tonsil. Symptoms as given by patient: "Something in the throat which will not come up or go down. Belching of gas during which act the throat seems to close up."

Case 1804. (M. C. Hosp.) Complained of irritation of the throat with hoarseness at times. Also dry throat and frequent colds.

Case 2290. (M. C. Hosp.) M. O. M. Hysterical aphonia with hyperemic and hypertrophied lingual tonsil. Symptoms: After talking a few minutes she feels lumps in the throat followed by aphonia. No dysphagia; some phlegm in throat. The patient is of nervous temperament.

Case 3411. (M. C. Hosp.) M. L., male 28; knitter. *Diagnosis:* Hypertrophy of lingual tonsil. *History:* Sensation of something in

the throat which makes him cough in order to get it out. Voice occasionally becomes thickened; states there is a good deal of impairment in speech.

Case 3511. (M. C. Hosp.) S. J., female, 40. *Diagnosis:* Hypertrophy of faucial and lingual tonsils. *Brief history:* Rawness in the throat especially at night. Feels as though there is a fishbone in the throat. Patient gave no history of eating fish. Has a croupy cough.

Case 2999. (M. C. Hosp.) H. B., 32, female, stenographer. *Diagnosis:* Hypertrophy of lingual tonsil. *History:* Subject to attacks of sore throat, the last attack lasting two months; slight cough; but is annoyed by the necessity of hawking up of phlegm and occasionally of blood. The condition seemed to be worse during the menstrual flow. In this latter case I did not think the condition of the lingual tonsil was sufficient to give the patient the symptoms she complained of and so I called upon Dr. Ridpath to examine the patient. He advised removal of patient's lingual tonsil. I followed his advice and the patient in a few days was rid of her trouble. This is the case that also had dysmenorrhea associated with the lingual tonsil trouble. It is as a result of this case that I took up this subject in detail and have attempted to give my findings in this paper.

Case 289. (P.) E. D., male, 43, baker, gave the following history: Previous to his call to see me, the patient, three months ago had his faucial tonsils removed for the following symptoms: Fullness in the throat, tickling sensation and the necessity of hawking to clear his throat of mucus and phlegm. Examination revealed a massive symmetrical enlargement of the lingual tonsil, The tip of the epiglottis was virtually sticking into the furrows of the lingual tonsil. The result in short of removal of this tonsil was that the patient is entirely free of all the symptoms previously complained of in relation to his throat.

Case 2044. (J. H.) *History in brief:* Sore throat for six years so annoying as to keep the patient awake many nights, constant desire to clear the throat. Examination revealed a marked varicosity and on further questioning I found that she has been a sufferer of some circulatory disturbance. I have treated her twice weekly, applying silver nitrate. The reply at her last visit was "she cannot express what a relief it was to have a good night's sleep." The patient has some nasal affection which prevents perfect breathing and will have to be cleared up before she is entirely cured. I could go on citing many cases but all will give practically the same symptomatology.

Earlier in my paper I mentioned a case of lingual abscess with edema of the epiglottis—another case which we were able to give quick relief, the condition having been overlooked by the family physician.

Case 3311. (M. C. Hosp.) G. M., male, 32; moulder. Had an attack of tonsillitis ten days before I saw him. First the left and then the right tonsil became affected. He was directed to use gargles but received no benefit from their use. He noticed that he began to have painful dysphagia. After another visit to the family physician he was directed to continue the use of the gargle but with no relief. On examination the patient remarked to me that the condition annoyed him so much that he was tempted to end his life. Examination revealed an inflamed and swollen posterior portion of the tongue, diseased tonsils, edema of the epiglottis and the whole tongue heavily coated. Under cocaine anesthesia I made several scarifications in the glosso-epiglottic space followed by a deep incision of the left lingual tonsil. Pus at once oozed out. Hot alkaline gargles and medicated inhalations were ordered. On the following day the patient declared that he would remain in this world and that he was perfectly well. My advice to have his faucial tonsils taken out was cast off with the excuse that "he could not spare the time."

Part of the title of this paper is the "Neglect of the Lingual Tonsil." I have not directly emphasized this aspect but by trying to prove the frequency with which this tonsil is the cause of many throat symptoms, I will have satisfied myself and, I trust, also my audience that this structure is greatly overlooked. I have studied over three thousand history cards in two dispensaries that I am associated with, and in one dispensary about 33 per cent of the cards have the condition of the lingual tonsil recorded. In the other institution about 5 per cent of the histories have note of the condition; in other words, a gross neglect in the examination of the throat and an injustice to our patients with no advancement of intelligence to ourselves. In the above three thousand cases we found 55 cases of abnormal conditions of the lingual tonsil. Of these, forty-three were hypertrophied; eight varicosities; two combined, i. e., varicose condition associated with hypertrophy; one abscess condition. Of the hypertrophied tonsils, one of the cases was associated with edema.

Of the 55 cases, 37 were females and 18 were males, or 67 per cent and 33 per cent respectively. Twelve, or 22 per cent of the cases were under 20 years of age; 16, or 29 per cent were between 20 and 30 and 27, or 49 per cent were 30 and above, up to 70 years of age.

Further study revealed the following facts: Sixteen had no associated condition; four had such condition as deflected septum or spur of the septum, conditions which, to my mind, have no material bearing. Ten cases were associated with hypertrophied faucial tonsils which might have some bearing, especially those cases under twenty years of age. The remaining 25 cases had such conditions as laryngitis, pharyngitis, lupus, glossitis, rhinitis and sinusitis, which I firmly believe are factors in the production of the vicious circle of the symptom complex. Of the first thirty cases mentioned, the study revealed that those cases are either below 25 years of age where the lingual tonsil has failed to atrophy or has remained hypertrophied by its association with its neighbors the faucial tonsils or that in those cases past middle life, the condition has been brought about by an impairment of the circulation, some constitutional disturbance or nervous state, but not by any local condition such as pharyngitis, tuberculous laryngitis, etc., as a primary condition *per se*.

Conclusions. 1. The lingual tonsil is greatly neglected in the examination of the throat.

2. Hypertrophy is a more frequent occurrence in females than in males.

3. Varicose condition of this tonsil is a frequent association of hypertrophy and is present in persons with disturbed circulation, being especially frequent in tuberculous patients. In my work at the Lucien Moss Home for Tuberculous and Incurable patients, practically all of the tuberculous patients have varicose lingual tonsils.

4. In my study of 55 cases of diseased lingual tonsils the time of more frequent occurrence was between 30 and 45 years of age.

5. I firmly believe that there is some connection between the lingual tonsil when hypertrophied or otherwise diseased and ovarian disturbance, possibly a similar connection to the congestive swelling and sensibility of the tuberculum septi and anterior end of the inferior and middle turbinates in dysmenorrhea.

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933 Lindley Avenue.

A MORE ACCURATE METHOD OF RECORDING TRACINGS ON THE GLATZEL MIRROR.

Dr. William O. Bonser, Toledo, Ohio.

In the use of the Glatzel mirror in a routine examination of the nasal passages, one of the principal difficulties for those who keep mimeographic copies of the results, is the accurate charting with the wax pencil of these results from the mirror.

One is expected to wait fifteen or twenty seconds after the mirror is exhaled upon and then make a rapid tracing with a wax pencil of the quickly vanishing moisture of condensation.

Fig. 1.

It is in this step that the greatest source of error occurs. Where the condensation is at all large as much as five to seven seconds are lost in completing the tracing of the right and left sides. One may be able to roughly trace, say, the condensation on the right side, but by the time this is done the condensation on the left side of the mirror is much smaller owing to the rapid evaporation. Then again there is the question of the personal equation which enters very much into the tracing through the use of the free-hand. These factors are such that many mimeographic records are but a poor copy of the condensation as originally revealed by the mirror.

These facts have prompted me to detail the method I have been using for some time. This consists in the use of a dusting powder which can be dusted over the mirror with instant application at the end of fifteen seconds (the time at which I record my results).

Gently blowing off the excess powder there is accurately and relatively recorded the right and left precipitation by means of the powder which becomes adherent to the condensed moisture (Fig. 2).

This area with the powder adherent stands out very distinctly and it is an easy matter then to transfer the picture to the mimeograph sheets.

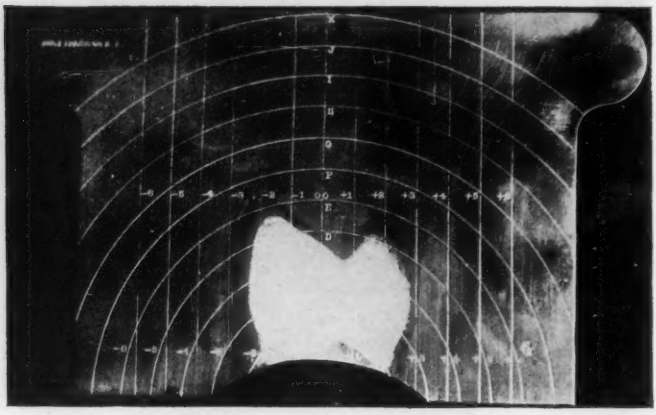


Fig. 2.

The powder used is dry sodium bicarbonate. I have been using a wide mouth bottle having a screw cap. Over the mouth I fasten a single layer of gauze by means of an elastic rubber band, the metal cap screwing over this when not in use to keep the powder from becoming damp (Fig. 1).

302 Colton Building.

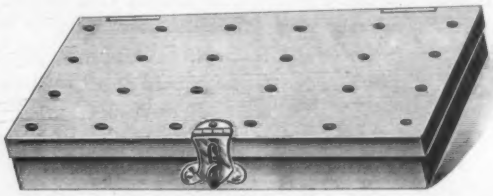
Abscess of the Thyroid Gland. F. Luz, *Brazil Medico*, No. 10, March 10, 1917.

Patient, a woman 50 years old, who had had the goiter for 25 years but it never gave her any trouble. A few months ago, after an attack of dysentery a large tumor developed in the thyroid with a fistula into the esophagus. Some pus was expelled into the esophagus, relieving the acute symptoms, but the abscess required incision and drainage. Subsequently the author resected the left lobe of the thyroid in which the tumor was located. ED.

EAR, NOSE AND THROAT INSTRUMENT BOX.

Dr. Alice G. Bryant, Boston, Mass.

The diagram represents a small box containing the requisite number of ear, nose and throat instruments, conveniently arranged and easily sterilized, for house to house visits. It will be noted that the cover is provided with a series of holes, and the base is likewise perforated, as is also the posterior side. A hole has been drilled through the swivel key, through which a hooked wire may be passed. By means of this support, the box may be placed in boiling water and removed from the same. The wire hook serves as an admirable handle for easily and quickly removing the box from its container and placing it wherever desired.



Instrument Box.

The interior of the box is compactly provided with instruments, in two ways. In the first place, there are those placed in its floor. Then there are those held in a tray that extends three-quarters way across the box. The tray is supported by means of four small pegs mounted in the floor. To enable the tray to be held securely in place, three upright pins, arising from the floor, are fitted into as many holes in the tray.

The instruments arranged in racks in the tray are, from front to back:

A folding tongue depressor, a stapes hook or foreign body hook, two small needle-pointed knives, two handles for the above needle-pointed knives, Dr. Jack's ear forceps, Dr. McKay's ear forceps.

In the bottom of the box, to the right of the tray, there are four or five ear specula and a small nasal speculum held in place by forked supports. Other instruments found here and beneath the tray are two post-nasal applicators that may be used in turn in

*Being a paper read at the twentieth annual meeting of the American Academy of Ophthalmology and Oto-Laryngology, Chicago, October, 1915.

one of the above knife handles, a bullet-tipped probe, a chromic acid nasal applicator, a peritonsillar knife, two silver ear catheters, a laryngoscopic mirror, one dozen alumino-bronze ear and nose applicators.

The box is made of copper and is nickeled; the tray is made of aluminum.

This case is 16.510 cm. long, 9.906 cm. inches wide, and 2.032 cm. high.

502 Beacon Street.

BONE GRIPPING FORCEPS.

Dr. Alice G. Bryant, Boston, Mass.

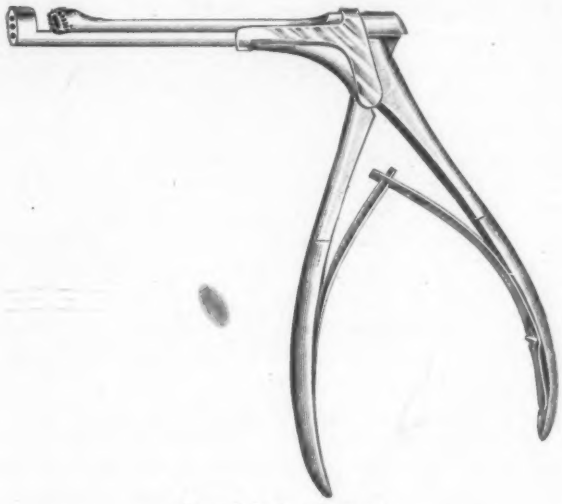
Let us consider a bone forceps, or what I like to call a gripping forceps. Many surgeons are probably familiar with the ordinary construction of these forceps. We will briefly refer to them. Two strong bowed handles are held apart by two powerful springs, which are attached to the inner surfaces of the handles. The springs interlock near the juncture of the handles.

The handles meet and cross by the fore handle, slipping through the hind angle. The hind handle from an angle of 60 degrees continues on its way to make the lower horizontal blade. It is stationary and extends beyond the terminal of the fore handle, while the fore handle, which is movable, is extended from an angle of 70 degrees to the horizontal and continues on its way to make the upper blade. It slides over the upper surface of the lower blade by peg and groove devices; and, at this point, I now pass to the terminals of the forceps, a device I wish to lay emphasis upon.

Several years ago, two patients presented themselves for operation. There existed a unilateral bony occlusion of the posterior nares with cystic condition of the antra. The walls were abnormally thickened in places, shelving to thin places here and there, in cross-section, much like a "V" in shape. The half-dozen or more different forceps I possessed, and many more that I had seen, did not appeal to me for the work in hand. Now I happened to notice that the opposing surfaces of the terminals of all these forceps met in parallel planes. Therefore, later, I

*Read at the twentieth annual meeting of the American Academy of Ophthalmology and Oto-Laryngology, Chicago, October, 1915.

decided to devise terminals with greater gripping power, and then I worked out the terminals to the above described forceps. The lower blade I had made to terminate in a fenestrated hood, oval in shape, compressed from side to side and flattened at its base. This hood was made to serve as a receiver for material removed. In its distal wall three holes had been drilled to enable one to push out the contained debris. The upper blade mounded up at its terminal, and its distal wall facing the hood was made to slant forward at an angle of 8 degrees, so that the apex of this surface would first impinge upon the bone. The



Bone-Gripping Forceps.

upper blade slipped into the hood of the lower blade along the entire length of the hood. The distal surface of the upper blade was concave and its edges were serrated. When not in use the distal and proximal surfaces of the respective upper and lower blades at the base were separated at a distance of .0095 cm. It now remains for me to refer briefly to the advantages gained by this kind of device. The forward projection on the upper blade with its concave surface and serrated edges enables one to take a firm hold of the bone and by this device to get rid of the evil of slipping. Thus the bone may be held between the two terminals of the upper and lower arms in griplike fashion.

502 Beacon Street.

GLASS SCREEN WITH ADJUSTABLE STANDARD.

DR. ALICE G. BRYANT, Boston, Mass.

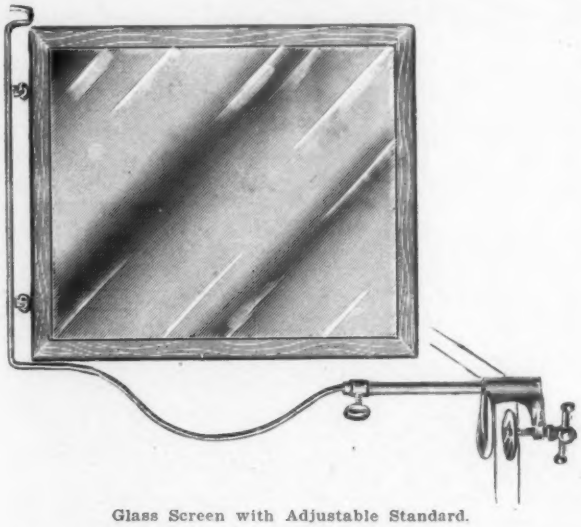
It will be seen that this figure presents an upright support, that is bent at a right angle at its upper terminal; and, from this horizontal extension, a framed pane of glass is suspended by means of two hooks. To be more explicit, this horizontal rod, .9522 cm. in diameter, is 44.450 cm. in length. At its right extremity, it terminates in a hook. At its left extremity, it dips perpendicularly for .0762 cm. There it curves outward to the left, until its maximum distance from a plumb line falling from the left extremity of the horizontal rod is 9.207 cm. At this point, it curves inward toward the right, and finally assumes the perpendicular for .0254 cm. The perpendicular distance between the upper and lower terminals of the rod measures 44.450 cm. This rod is encircled by an immovable collar at its lower extremity. Then the rod extends for 13.335 cm. in a tube 17.145 cm. long by 2.963 cm. in diameter. The tube is mounted by a cuff, an inch in depth, upon which rests the immovable collar of the enclosed rod, by means of which the rod is kept from swaying.

This rod can be raised or lowered in the tube. It can be adjusted as to height and securely fastened by means of a screw which passes through the outer side of the cuff of the tube, and thus the pane of glass may be conveniently placed as to height. Further, this tube terminates in a fixed collar 7.302 cm. deep. From the posterior surface of the collar project two stationary horizontal flanges that are separated for a distance of 2.698 cm. Through the lowest flange, at its outer extremity, a hole has been drilled and threaded, and an upright screw passes through it; and it may be made to impinge upon the under surface of the upper flange. One is enabled to clamp the iron standard to a treatment table, by turning the screw by means of the cross-beam handle. The screen is of plate glass mounted in an ebonized wood frame, and it is 50.165 cm. in length, by 42.545 cm. in breadth.

The salient features of this apparatus are: The bowing out of the upright rod serves as a loophole for hand and forearm to

*Read at the twentieth annual meeting of the American Academy of Ophthalmology and Oto-Laryngology, Chicago, October, 1915.

pass between the screen and rod during examinations and treatments. Thus we avoid touching either the screen or its standard. The screen is held lightly between the flexor surfaces of our forearms. The patient, by means of the hooked end of the horizontal rod, may easily swing the screen into position, or return it to its stall by a suggestion from the physician. For several reasons, a screen and standard of this device, or of a simlar device, should be a necessary requisite for every ear, nose and throat treatment table. First, the object in view is no small



Glass Screen with Adjustable Standard.

one, when we consider the sense of security it gives patients, in so far that they may cough at the screen and not at the physician when their throats are undergoing an examination. It clearly is a boon to sensitive patients.

Second, there is a relaxation on the part of the patient.

Finally, it is very effective in permitting a more thorough and more prolonged examination, and it is more sanitary both for patient and physician.

502 Beacon Street.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON LARYNGOLOGY AND RHINOLOGY.

April 25, 1917.

Laryngectomy for Epithelioma. DR. HUBERT ARROWSMITH, by courtesy of DR. P. H. STURGES.

(To be published in a subsequent issue of THE LARYNGOSCOPE.)

DISCUSSION.

DR. HARRIS said that the successful cases of laryngectomy are still so few that Dr. Arrowsmith was to be heartily congratulated on the result in this instance. It was a very beautiful operation. The case, however, suggested two important questions: first, the wisdom of employing radium in such cases. One should never lose sight of the fact that radium is not only an agent for good but that it may be an agent for evil; and in this instance it may have done what it is known to do frequently, i. e., increase tissue growth. The other question had been recently discussed in the *New York Medical Record*—namely, the propriety of removing a portion of the growth for diagnosis, and allowing a greater or less interval to elapse before the operation. There is certainly much to be said against this procedure. As much as fifteen or twenty years ago Sir Felix Semon declared that there was great danger in allowing any interval of time to elapse—certainly not as much as two weeks—between the removal of a section and later operation.

DR. HARMON SMITH asked if the larynx had been microscopically examined after its removal. He cited an instance of a case reported by Sir St.Clair Thomson where carcinoma of the larynx had been removed inadvertently, where the effort of the operator had been exercised only to remove a specimen for microscopical examination. The microscopist assured him that he had fully circumscribed the malignant growth in the piece removed. Shortly afterward there appeared a large mass of granulation tissue at the place from whence the growth had been removed and it was with great restraint that he was able to withhold further operative measures, but believing firmly in the report of the microscopist that all of the malignant tissue had been removed, he did not operate but treated the granulations as granulations are treated elsewhere and after a short period it all disappeared.

A year and one-half after the removal of the growth there was no reappearance of the cancer.

Dr. Smith said he had understood Dr. Arrowsmith that ten or twelve days subsequent to the removal of the growth he had feared a recurrence and that radium was then applied.

DR. ARROWSMITH expressed his regret that he had not made himself clearly understood. He had stated that the specimen was removed at the first sitting, and that at the second sitting, ten days or two weeks later, all the visible mass of the growth was removed under suspension. Dr. Abbe had suggested this, with the idea that after it had been done he would apply radium, but it was not applied at all. Dr. Arrowsmith

said that after talking the matter over with Dr. Sturgis he had urged the complete removal of the larynx, and the delay in doing this was because it took a long time to persuade the family to make up their minds. There had been a very decided change between the time when the specimen was removed and the removal of the mass,—there was a very marked extension of the growth in that period.

As to whether or not the larynx had been examined after removal, he could not say. He had not seen it since removal. The removal under suspension was performed on February 2; ten days later the laryngectomy was performed.

DR. SMITH said that the point he wished to make was that frequently after the removal of malignant tissue there would spring up in its place granulation tissue assuming the nature of the original growth and tending to lead the operator to conclude that he has a recurrence of the malignancy. Recently there occurred, at the Manhattan Eye and Ear Hospital, in his own clinic, a case in which a sarcomatous tonsil had been removed and a week later the operator was desirous of sending the patient to the General Memorial Hospital for treatment by radium, in the belief that the presence of an immense amount of granulation tissues was a recurrence of the sarcoma, but upon further consideration the case was held under observation and the granulation tissue disappeared and no evidence of recurrence of the growth has since appeared. Removal of malignant growths from the larynx is almost invariably followed by the appearance of granulations, which is the only means by which the process of healing can take place upon denuded cartilage.

Dr. Smith said that he had sent several cases of carcinoma of the larynx to the General Memorial Hospital, in each of which tracheotomy had been previously performed and in each instance radium was applied by a very eminent specialist in this line, but in no case had he been able to observe any benefit from its application.

DR. MCCOY said that this was a subject which was always fruitful for discussion, and one in which one should emphasize the points learned in his own experience. The first point that comes up is the possibility of this condition being specific. He had heard of cases in which larynges had been removed because the patients had what was supposed to be a malignant growth, which subsequent examination proved to be syphilitic. Everyone is aware that the Wassermann test is not always to be relied upon. A patient may have a Wassermann test made by one man who will pronounce it negative, while another man may make another test and find it three plus or four plus. One should always have the most reliable man that can be found to make the test.

In regard to removal of a section for examination, the pathologist (at the Infirmary) states that it takes him at least five days to harden and thoroughly examine a specimen, and that five days can readily stretch into six or seven. It had therefore been his practice to do a low tracheotomy, and at the same time take a section from the laryngeal growth. The pathologist then takes from five to seven days to make a report. Having made up your mind pretty well that the growth is malignant, it would seem that that would not be too long a time to elapse between removal of the section and removal of the entire larynx. One might have a frozen section made, but it was not certain that that

was a sufficiently reliable method to warrant a radical operation. Dr. McCoy said that he had presented two such cases before the Section in the last year, upon which he had operated by a technique which he had found very effective—it consisted in observing a triad * * * which if followed faithfully gave an absolutely uneventful convalescence. Heretofore a very stormy convalescence has been expected after a laryngectomy.

The method which he advises is first a very low tracheotomy; second, sterilization of the mouth and teeth as thoroughly as possible; third (what he considers a very great aid), rectal anesthesia (Gwathmey method).

The cases that he had presented went through a practically uneventful convalescence. Since then he had operated upon a third case which terminated fatally, because of the non-observance by the house surgeon of a cardinal principle; that is, frequent change of dressings in upper part of wound. This patient not only had carcinoma of the larynx, but it had extended four inches down into the esophagus so that upper end of esophagus had to be resected, and he turned the esophagus into the neck as well as the trachea; nevertheless, the operation was successfully performed and he went on splendidly for a week, with only a slight rise of temperature. Then the dressings were turned over to the house surgeon, and instead of repacking and keeping the upper wound dressed diurnally, he got the idea that the thing to do was to slowly pull out this packing, and at the end of the week some of the secretion infected from the curette got into the patient's trachea, and he died of pneumonia in twenty-four hours.

Dr. J. G. Callison said that the rapid growth of this tumor between the time of removal of a piece for diagnosis and the operation illustrated the impotrance of shortening the time interval. In a number of the more recent methods of handling tissue, the diagnosis can be made in forty-eight hours at the outside. Dr. Strong, of the Woman's Hospital, recently published a paper describing a method of handling tissues by which he makes routine diagnoses in less than forty-eight hours.

Dr. Callison said further that he himself had recently modified the ordinary alcohol-anilin oil-xylol-paraffin method of fixation so that it is frequently possible to return a diagnosis in much less time than forty-eight hours. He had also seen some very excellent alcohol-acetone-paraffin specimens in which a diagnosis was returned in three hours after the specimen was received at the laboratory. That method, however, required a more than ordinarily well trained attendant; but it is possible for any ordinarily well trained attendant to prepare sections for diagnosis inside of forty-eight hours.

Dr. MacKenty said that in Dr. Arrowsmith's case the one-stage could not have been done, but whenever possible he prefers that method. In this country the two-stage operation is usually preferred. Dr. Arrowsmith was to be congratulated on his result. He agreed with Dr. Smith that radium is useless in cancer of the larynx. It has never been proved to effect a cure of the disease.

The removal of tissue should be discouraged, as it increases the danger of dissemination of the disease. When the esophagus is involved, opera-

tion is useless and operating on hopeless cases throws discredit on the operation. If the disease extends beyond the arytenoids, nothing short of block dissection of the neck will give the patient any permanent help. The growth will recur every time, though it may be slow in appearing. In one instance two and one-half years elapsed after the laryngectomy before the neck became involved. This was an advanced case in which the block dissection of the neck was not done.

Dr. St.Clair Thompson's case should not have been published, for it encourages the method of attack which is worse than useless.

DR. HARMON SMITH said that Sir St.Clair Thomson stated positively that the entire growth was removed inadvertently and that his effort had only been to remove a piece for microscopic examination, but that Dr. Lynch, of New Orleans, had reported a case in which the malignant growth of the larynx had been removed by suspension, with the full intention of complete removal, and the case had turned out successfully.

DR. YANKAUER said he wished to make a few comments on Dr. Arrowsmith's attempt to remove a carcinoma of the larynx by suspension, with the laryngoscope. Some cases can undoubtedly be removed by this method. Some time ago he himself had at Mount Sinai Hospital a case of carcinoma involving the epiglottis, both ary-epiglottic folds and one of the false cords. The patient refused operation, and even tracheotomy, but he was willing to submit to anything that could be done intralaryngeally. Accordingly the epiglottis was removed, with both ary-epiglottic folds, and the arytenoid and the mucous membrane was stitched together. This was done without tracheotomy. There was no edema afterward, and the parts apparently healed, but within a month afterward the mass began to reappear in the anterior commissure which gradually developed, and in four months a tracheotomy had to be done. Immediately following operation—a week afterward—radium was applied to this case. It was given with the largest tube that could be inserted. The patient had not then been treacheotomized and the radium tube could not be introduced into the larynx, for the patient could not breathe, so a special intubation tube was made. In order to prevent the deleterious action of some of the rays it was necessary to surround the radium with a definite amount of rubber, and it was a pretty close fit to get the tube in and allow room for the patient to breathe. In order to get around this difficulty, a lateral opening was provided, so that if necessary the patient might be given oxygen without removing the tube. The tube was left in for eight hours. A number of these applications were made, but in spite of this the growth recurred, and it was necessary to do tracheotomy. The patient has since died.

The attempts to remove these growths with the laryngoscope will fail when the growth is extra-laryngeal; but cases with a strictly intra-laryngeal carcinoma of the kind where a laryngotomy would otherwise be performed with removal of the vocal cord, can be done under suspension.

DR. CARTER said that his observations, gained not from personal experience but from study, was that carcinoma of the larynx during its early stages, when confined to the cartilaginous laryngeal box may be attacked with some hope of eradicating it by intra-laryngeal methods. From what the previous speaker had said, it would seem that he considered it im-

possible to remove such a growth without complete removal of the larynx, even in the earliest stages of the disease.

DR. STURGES said that he had nothing to add to the report excepting to say that the specimen had been examined by two pathologists, and the fact that both found it to be a squamous epithelioma proved the diagnosis to be, in all probability, correct.

DR. ARROWSMITH, in closing, said he was sorry he had either read so indistinctly or that the report was so constructed that he had been misunderstood. The facts, however, were all right, and Dr. Sturges was to be congratulated. Dr. Arrowsmith did not try to remove under suspension laryngoscopy; it was the suggestion of Dr. Abbe that as much as possible should be removed so that radium might be applied. It was certainly Dr. Arrowsmith's judgment, and he did it under protest.

Dr. Arrowsmith said he was glad that Dr. Smith and Dr. MacKenty had come out so definitely on the matter of radium in malignant disease. What they had said corresponded with his own views on the subject. Dr. MacKenty has practically demonstrated the truth of his contention that the one-stage operation is preferable to the two-stage operation. Dr. Arrowsmith said that his own experience with thyrotomy in the removal of growths of this kind is unfavorable. Even in the most circumscribed cases the growth has not been eradicated and the recurrence has been rapid.

Case for Diagnosis. DR. H. ARROWSMITH.

The patient, a young woman, consulted Dr. C. T. Sauer, of Brooklyn, about two years ago, who found an involvement of the lungs of tuberculous character, worse on the right side. The patient stated that she had always suffered from recurrent attacks of tonsillitis and sore throat, and from the onset of her trouble her cough has been an extremely troublesome feature. A tonsillectomy was performed about a year ago, and she had a very bad time with the anesthetic, followed by acute nephritis with suppression of urine for several days. The nephritis lasted for several weeks, and according to the doctor's report she was very sick. After the throat healed from the tonsil operation, the doctor discovered that the patient had a tumor in the larynx, and requested Dr. Arrowsmith to examine her. On the 3rd of January, 1917, under suspension and local anesthesia, a papillomatous mass was removed. That seemed to aggravate the cough, and the patient was coughing so much that she could not sleep, and suffered from frequent vomiting, with considerable disturbance of nutrition. The papilloma recurred promptly, and it was thought that the vomiting and aggravation of the cough might be occasioned by some involvement of the esophagus, so under oil ether colonic anesthesia, on the 25th of December, she was again suspended, the papillomata removed, and the base fulgurated as thoroughly as possible. Just below the crico-phayngeus the esophagus was very much obstructed, and the tubular obstruction extended down some three inches. The mucous membrane was thickened and in folds, and the condition was a very puzzling one.

The oil ether anesthesia was eminently satisfactory. The patient had no unpleasant symptoms, passed water freely after coming out from the anesthesia, had no kidney irritation, and practically no vomiting.

Four days later she was again esophagoscoped, and a practically normal esophagus was found. This time the examination was made under local anesthesia, and the patient was quite nervous, and when it was over she broke out in large cutaneous wheals—erythematous and raised—on the chest. Consequently it seems fair to assume that the esophageal obstruction encountered at the former inspection was an angio-neurotic edema. There was no question about that. The passage of the esophagoscope and subsequent passages of bougies for psychical reasons seemed to help the vomiting. That ceased, but the patient still continued to cough, so that it interfered with sleep and nutrition. The only thing which helped the cough was local applications, which she objected to, so that at last Dr. Sauer tried pituitrin, administered three or four times a day. That has helped her more than anything else.

Dr. Arrowsmith said that he would be very glad to have any suggestions as to the treatment of this case.

Primary Jugular Thrombosis Due to Tonsil Infection. DR. CHARLES GOODMAN.

(To be published in a subsequent issue of THE LARYNGOSCOPE.)

DISCUSSION.

DR. MCCOY said that the case was a very unusual one. A question that had occurred to him was whether when Dr. Goodman ligated the vein he found the thrombosis only in the facial vein, or whether it extended to the jugular as well? Would it have been just as efficacious to have tied off the facial as to have tied off the jugular? He had not understood just where the clot was found in the vessel.

DR. HARMON SMITH said that he wished to congratulate Dr. Goodman upon making a diagnosis where the symptoms of tonsillitis with a temperature of 104 to 105, together with the aches and pains described, are frequently almost a parallel with the symptoms of a jugular thrombosis. That most throat specialists would have hesitated to invade the jugular upon the clinical symptoms alone, particularly as it was definitely determined the ear was not involved, which as everyone knows, is the most frequent source of infection of the sinus.

Dr. Smith regretted that it was not possible to utilize some mechanical means of diagnosing a thrombosis of the jugular and believed that ultimately the sphygmographic record of the carotid artery would show a variance from the normal on the side where the jugular or sinus was thrombosed.

DR. GOODMAN said that the thrombosis extended below the patient's facial tributary and included it. The needle was first introduced to see where it extended, and failing to get free blood, the dissection was continued up the tributary for at least an inch. The thrombosis of the jugular was very extensive—at least an inch to an inch and a quarter. That was why the jugular was ligated and removed.

As regards the diagnosis: the patient was running a very septic temperature, she had chills and an unusually high temperature of 107.2 when he was called to see her, and although up to that time cultures had been negative, in the region of the jugular vein there was a distinct line of infiltration and induration which could mean nothing else than thrombosis of the jugular vein. Physical examination of the patient yielded no symptoms that would indicate anything else, and it was therefore

felt that she was entitled to that diagnosis. The operation revealed what had been expected.

Mucocele of the Ethmoid and Frontal Sinuses: Radical Operation. DR. JOHN MCCOY.

The patient, a girl 14 years old, was first seen six weeks ago at the New York Eye and Ear Infirmary. She gave a history that she had been coming to the Eye Department for three years, and during that time had had two x-ray plates taken (plates presented) by Dr. Dixon. She presented herself because she had what was apparently a bony growth at the inner angle of the right eye, which pushed the eye downward and outward, and the process was pushing the eye further out all the time. Various diagnoses had been made—osteoma, sarcoma, etc.

Dr. McCoy said that he had been asked to see the patient and owing to the similarity of the case with one which he had seen an operation upon four years ago, he made the diagnosis of mucocele. The x-ray plates showed the manner in which the mucocele had pushed the orbital part of the frontal and the orbital part of the ethmoid out into the orbital cavity—pushing the eye externally.

It was decided that a radical operation was necessary, and the operation was performed under oil-ether colonic anesthesia. Dr. McCoy said that he had consulted with Dr. Gwathmey about this, and told him how little effect adrenalin appeared to have when ether was administered by the nose or mouth, and asked whether he thought that rectal anesthesia would lessen that difficulty. Dr. Gwathmey thought it would lessen the bleeding very much. An interesting point in regard to the fact that the pressure of this growth had destroyed many vessels that otherwise would have bled, or whether because of the method of administering the anesthesia by the colon allowed the adrenalin to have a better effect, it was certain that the hemorrhage during the operation was markedly less than usual.

The operation was performed through the classical incision, and in passing the periosteal elevator back, the orbital plate was found to be very thin and cracked into the ethmoid labyrinth, exposing a well of glairy mucus. The ethmoid plate was plainly visible, pushed out into the eye, and the sphenoid also was filled with this glairy mucus; it had destroyed practically all the ethmoid cells—there was nothing but a large hole filled with this mucus. The mucus was removed by suction, the orbital plate of the ethmoid was taken down, clearing out the ethmoid and sphenoid, and the patient is making a good recovery. When the slight swelling remaining from the operation has disappeared, the cosmetic result will probably be very good.

DISCUSSION.

DR. CARTER told of a case seen four years ago with mucocele of the ethmoid and frontal sinus, and regretted that he had not brought with him a cast which he had made. There was a very distinct bulging of the ethmoid area just in front of the eye and the floor of the frontal sinus. The eye was shoved to one side and one nasal cavity was completely obstructed and had been so for six months. The patient stated that previous to that time there had been copious discharge of pus. At operation, an incision was made from the inner extremity of the eyebrow

downward along the side of the nose. The entire ethmoid area was found to be one big cavity filled with mucus. The os planum of the ethmoid was not pushed toward the eye, but was completely absorbed, as was also the nasal process of the superior maxilla, and there was considerable bulging at that point. When the cavity was opened, it was found that this glairy mucous material extended into the sphenoid. Free drainage was established into the nose and the ethmoid wound was closed. The case was followed up for a year and a half and had had no recurrence in that time, so that the recovery seemed to be complete.

Why should this case appear in the x-ray plate to be occluded by some opaque material? In his own x-ray, as in all the plates exhibited to-night, the affected area appeared to be filled with pus.

DR. MACKENTY showed two plates representing an extensive mucocele involving the frontal region, ethmoid, and sphenoid. Dr. MacKenty said that in these cases it was most important to remove all the mucocele membrane, otherwise the condition would not heal.

DR. HERZIG asked if the ophthalmological report showed any edema of the retina.

DR. MCCOY, replying to a query from Dr. Leshure, said that the orbital plate of the frontal sinus was thinned out like an egg shell, but not that on the antero-wall of frontal, so that bridge was left and deformity was not noticeable. The x-ray plate showed a slight shadow in the antrum and the antrum of the affected side was more shadowy than the other, yet the haziness was not of the character that appeared in the affected frontal and ethmoid above. Since operating, he had transilluminated the antrum, and it would give the impression that there was a thickened membrane, rather than fluid in it.

Replying to Dr. Herzig's query, Dr. McCoy said that he could not recall the ophthalmological report, but that the patient's vision was quite defective in that eye.

Tuberculosis of the Larynx. DR. G. E. DAVIS.

Dr. Davis said that this patient first consulted him on April 18, on account of great hoarseness and coughing, and severe pain on swallowing. Examination of the larynx showed the characteristic edematous infiltration of the epiglottis, giving it the turban-shape. The ventricles of the larynx were infiltrated and bulged over the right vocal cord near the commissure. The case was not especially unique, but was presented on account of its characteristic appearance.

Practically nothing was being done in the way of clinical treatment, only a mild astringent of one per cent nitrate of silver being used; but for the intense pain, one per cent cocain in camphor water was applied a few minutes before the patient eats. The right vocal cord is now plainly visible, and the patient is much better in that respect; he is not so hoarse, the pain has diminished, and the cough is only about half as frequent. Examination of the lungs was negative. Wassermann, negative. Patient is receiving tonic treatment, and advised to give up indoor life and live on the farm.

DR. HERZIG suggested the application of urea quinine to the glands, a solution of the same to be used as a spray. It gives more relief than cocain in cases of tubercular meningitis.

DR. IMPERATORI suggested injection of the superior laryngeal nerve with alcohol, which would relieve the pain for a time, varying from a few weeks to months.

DR. HERZIG said that he had injected three cases with the urea quinine and that it had given the same effect as with alcohol or cocain.

Cases of tubercular laryngitis are relieved by injections of a two per cent solution of urea and quinine hydrochloride, injections being into the region of the recurrent laryngeal nerve.

Diverticulum of the Esophagus; Radiogram and Specimen. DR. S. MCCULLAGH.

William P., age 73, presented himself at the clinic of Dr. L. A. Coffin at the Manhattan Eye, Ear and Throat Hospital on Feb. 29, 1917, complaining of dysphagia and regurgitation of food. This condition had been present for about 15 years. For the past two years had been practically unable to eat solid food. Large amounts of liquids taken at one time would lodge in the esophagus and cause severe dyspnea. This would be relieved by vomiting.

At three sittings I was unable to find the subdiverticular opening with the esophagoscope. Dr. C. J. Imperatori was present at the last sitting and also failed. We decided that suspension might be of value and on April 4 we suspended the patient and searched the diverticulum with the esophagoscope but failed again to find the opening. The bottom of the diverticulum was 25 cm. from the upper teeth.

The radiogram shows about five ounces of bismuth mixture in the diverticulum, all that was given at the time the plate was made. Examination with the fluoroscope at this time revealed none of the bismuth passing down. Estimations made later indicated that it held from 8 to 10 ounces.

The examination under suspension was made with great gentleness—the subsequent operation revealing no trauma—but a fairly severe febrile reaction ensued, a chill occurring 48 hours later, with a rise of temperature to 104°. The dysphagia was naturally increased and regurgitation of everything ingested became immediate and almost complete. Saline was given by the bowel.

On April 9, an operation by the method of Gaub, as described by Jackson was performed, the external work being done by Dr. J. E. MacKenty, while I used the tube. There was no difficulty in locating the diverticulum which lay posterior to and a little to the left of the esophagus. It extended below the level of the clavicle. It was dissected out and removed expeditiously and the esophageal wound closed after the insertion of a nasal feeding tube which extended well below the esophageal wound. A drainage tube was inserted to the bottom of the bed of the diverticulum and the wound was packed.

In feeding the patient after the operation it was evident that a marked contraction of the stomach had taken place as the introduction of 8 ounces of fluid would cause marked discomfort and congestion of the face. The patient developeda very troublesome cough which was productive of a very thick, tenacious mucus, of glue-like consistency, which had to be wiped from the mouth. There was a patch of consolidation ov in the base of one lung which showed no tendency to extend. About the third day

after operation the wound discharge had the characteristic odor of colon bacillus infection. The use of Dakin's solution, one-half per cent, eliminated this entirely in 48 hours. There was little indication that the processes of repair were active in the wound at any time.

On the afternoon of April 18, nine days after operation, while dressing the wound, the patient was given a small amount of water by the mouth to swallow in an effort to determine the condition of the esophageal wound. Hemorrhage occurred, which ceased spontaneously after about six ounces of blood had been lost. About eight hours later there was a recurrence of the bleeding which was gotten under control by the house surgeon with some difficulty by packing. Feeling it was necessary to ligate the bleeding point, the patient was anesthetized and search was made for it without success, although an attempt was made to cause it to bleed. The wound was packed and the patient returned to bed. His condition became progressively worse. About 48 hours after this operation bleeding again occurred which was apparently controlled by packing, but the patient died a few hours later.

An autopsy was not obtained but examination through the wound showed a small esophageal fistula, very slight evidence of repair in the neck wound, and the posterior mediastinum full of clotted blood. The source of the bleeding could not be determined.

DISCUSSION.

DR. MACKENTY said that the case was a most interesting one for the diverticulum went down so far behind that it made a very dangerous looking hole. If he were called upon to operate on another such case, instead of making any attempt to remove the sack he would go down and cut the sac off and leave it in the neck and pack it, and in that way the mediastinal space would be safeguarded. At the second operation, the same deep hole was entered, which extended three inches below the clavicle—a good finger's length to the bottom. It was not in the anatomical posterior mediastinum, but in the so-called superior mediastinum. In the bottom of the cavity was another round opening as large as a little finger, into which the probe passed down two or three inches into the posterior mediastinum. It was evident that the hemorrhage came from this latter place.

The patient was a very poor risk to start with, and during the whole time of his sickness there was a low-grade pneumonia in the left lung, with a temperature of 101-3°. Pneumonia plus hemorrhage from the posterior mediastinum caused his death.

DR. A. C. CRUMP said he thought it would be interesting to the members of the Section—in connection with this discussion of the diverticulum case—to get an accurate idea of the relationship of the sac to the esophagus itself. He had been engaged in this work for two or three years, and the picture presented had been taken for Dr. Brewer. The patient was a man, 56 years old, who gave a history of difficulty in swallowing and regurgitation after eating. He had lost 25 pounds in weight. He had always been thin, but was only skeleton and bone when he entered the hospital. The problem was to find the opening into the sac and make an accurate entry near the opening, and to do the operation as quickly as possible. The method employed was to use a sausage skin tied at one end so as to form a long sac, and to have the patient

swallow it while in a collapsed condition. The gut was slimy and slippery, and so easily swallowed. It was then filled with bismuth while the patient was standing, and thus a proper idea of the relationship of the parts was obtained.

The patient was operated upon ten days after entering the hospital, and had primary healing, going home two weeks later perfectly well.

A Case of Bronchiectasis, Showing Results of Bronchial Irrigation. DR. SIDNEY YANKAUER.

(To be published in a subsequent issue of THE LARYNGOSCOPE.)

DISCUSSION.

DR. YANKAUER, replying to a query from Dr. MacKenty, said that he irrigated the patient twice a week, the first time using a normal saline solution, and the next time a dilution of Lugol's solution in the strength of one dram to a pint of water. The patients tolerate that without difficulty and it could probably be used stronger.

Replying to Dr. Imperatori, who asked if the patients coughed during the irrigation, Dr. Yankauer answered in the affirmative. You have to apply cocain through the bronchoscope.

DR. MCCOY asked if anything came back through the small tube

DR. YANKAUER replied that all the irrigating fluid, together with pus and secretion, was returned through the larger of the two tubes. A suction apparatus was employed with 10 pounds pressure. The patients do cough out some through the bronchoscope if the fluid is injected too rapidly. The quantity used was measured, and they usually get back all that was injected. The canula was introduced as far into the bronchus as possible. There were a number of little tricks to be acquired in doing this work. One does not always get into the lung abscess, for it is usually separated from the main bronchial tree. The main purpose was to remove all the secretion from the bronchi. In looking down at the bronchus, the outlines of the tracheal rings and other details are rather obscured, for the bronchus is covered with glairy mucus which cannot be removed by suction or wiping, but after the irrigation the rings and other details stand out very distinctly, so that it is evident that the obscuring material has been removed; and it is that removal of the tenacious material from the smaller bronchi that does the work.

Personal Reminiscences on Rhinology and Laryngology. DR. FRANCKE H. BOSWORTH.

Dr. Bosworth rapidly sketched his early experiences, as a teacher and writer, and in a very amusing way recounted his various tilts with some of the older masters of our specialty, especially Sir Felix Semon.

He also spoke of his early efforts to teach, that the nose was a part of the respiratory mechanism and not entirely the organ of smell.

His experiences, when cocain was introduced, the use of the nasal saw for the removal of septal deflections, the Jarvis snare and regarding the spokeshave for the removal of the inferior turbinate, were recounted.

Dr. Quinlan, Dr. Harmon Smith and Dr. Harris, in appropriate words, expressed the sentiments of the members present, in that the Section extended to Dr. Bosworth its congratulations, best wishes and hearty felicitations, to him as the dean of American Laryngologists, whose fame as a pioneer in rhinology and laryngology was world-wide.

Regular Meeting, May 23, 1917.

Two Cases of Vincents' Angina. DR. ABRAHAM.

DR. ABRAHAM said that about two months ago he had presented before the Section a case of Vincent's angina with extensive lesions. Two weeks ago another case came for consultation, and on Tuesday a third appeared. All of these cases had pure Vincent's angina. Fortunately neither of the patients presented showed marked lesions, both having been cured.

The first patient was a young man who appeared at the clinic with a marked lesion involving the entire left tonsil. The peculiar odor at once roused suspicion; besides that, there was a marked pyorrhoea. Smears from the tonsil and teeth showed the fusiform bacillus and spirilla of Vincent's angina, staphylococci, and many other bacteria.

After one treatment with carbolic acid, the tonsil smears showed a few of the Vincent's organisms, but no other bacteria. Smears from the teeth still showed Vincent's organisms and many other organisms. After the second treatment, the tonsil smears showed no bacteria, but the teeth were still infected with a few Vincent's organisms and others.

After the patient was discharged from the hospital, the Vincent's angina attacked the opposite tonsil, but one or two applications of the carbolic acid cleared up the condition.

The second patient was a young woman, a nurse, who complained of severe pain on the left side of the throat. Again the peculiar odor and lesion aroused suspicion. Examination of smears from the tonsil showed numerous fusiform bacilli and spirillae of Vincent's angina. The left tonsil was ulcerated and the acid was applied with cotton tipped applicators. After one treatment the tonsil smears showed very few Vincent's organisms. After the second treatment, no spirilla nor fusiform bacilli could be found.

In the clinic the acid is usually applied with cotton tipped applicator. One must be careful to get well down beneath the necrotic tissue, so that the acid will come well in contact with the ulcerated surface. In this instance it was made three quarters of an inch deep. The anterior pillar was pulled back so that the acid might be thoroughly applied.

Dr. Abraham said that he had used this acid treatment in all of his cases of Vincent's angina and had never had any adhesions follow its employment. The tonsils clear up leaving only a little scar tissue. He uses the purest acid obtainable. The acid application is followed by one of alcohol; it makes no difference if the acid goes a little beyond the involvement, for the alcohol will neutralize it. No cocaine was used with these cases.

In the majority of cases one application of the carbolic acid is sufficient; in others, two will be necessary.

DR. ARROWSMITH said that Dr. Abraham had succeeded almost as well with the carbolic acid treatment as others did with salvarsan.

DISCUSSION.

DR. CALLISON said that some of the cases of Vincent's angina had suggested to him that the etiological organism was some form of streptococci, and that Vincent's spirillum was present as a secondary soprophyte.

DR. SMYTH said that he did not quite understand what Dr. Arrowsmith's treatment was.

DR. ARROWSMITH said that he employs a five per cent solution of salvarsan in glycerin.

DR. MACPHERSON, replying to Dr. Scruton's remark, said that the literature reports show that the spirillae and fusiform bacillus are found in a great many conditions in the mouth. In different forms of stomatitis, in noma and in other conditions. The finding of both on a smear does not prove the presence of Vincent's.

Chancre of the Soft Palate. DR. J. H. ABRAHAM.

This patient was first seen about two weeks ago. No history of infection was obtainable. Examination showed on the soft palate what he considered a typical lesion. Smears were examined, but showed no spirochaeta pallida. Wassermann test also was negative. These were repeated twice, with no positive results. A thorough blood count had been made, but Dr. Abraham said that from past experience he was at first confident that it was a case of initial lesion. He presented the patient before giving any treatment, as he wished the members to see the lesion.

DISCUSSION.

DR. L. M. HURD asked if he was correct in understanding that Dr. Abraham removed all the slough.

DR. ABRAHAM replied that he removed as much as possible without producing hemorrhage.

DR. HURD said that recently he had seen a case in which the lesion embraced the lateral pharyngeal wall. The entire tonsil was gone and half an inch of the adjacent portion of the tongue was a mass of slough. It was the only case he has seen where salvarsan had not cured the condition and he had feared that the slough would affect the big vessel. He did not think one could get the slough off.

It does not make any difference whether one uses carbolic acid or trichloracetic acid—after one or two applications you cannot find the fusiform bacillus and spirochaeta, but the process continues.

DR. FREUDENTHAL said that he had never seen a case of primary specific infection of the throat, but that Dr. Abraham's case reminded him of two instances of primary infection of the nose that came under his care several years ago. These two cases concerned two physicians, both gynecologists. They had examined women in the clinic; both of whom were specific. Then in discussing the cases they had picked their noses and in that way got the primary lesions. The cases very much resembled this one.

DR. FAULKNER quoted the definition of cancer and of tubercular ulcer as given in an old text-book: The malignant ulcer in the mouth has hard elevated edges; the tubercular ulcer has irregular edges, etc., and the specific ulcer is a deep ulceration with perpendicular walls. Before entering upon special work, he had seen more cases in London in six months than he ever expects to see in special work. These three definitions are as nearly correct as they can be made; but a red hard edge is not likely to be a tertiary lesion. In his opinion, the appearance of the growth was fairly typical of epithelioma.

DR. CALLISON said that as he understood the history the lesion seen in this patient had been present since the first of February. A specific lesion of that duration will give a positive Wassermann reaction in over 90 per cent of cases. The cervical glands in these cases were large, diffusely infiltrated and adherent on both sides of the neck. In his opinion, Dr. Faulkner's diagnosis of epithelioma was probably the correct one.

DR. ABRAHAM, closing the discussion on the three cases, said he was aware that salvarsan had been very successfully used in these cases of Vincent's angina, but before he had heard of it he had been using carbolic acid and the results were so good that he had simply continued it. He made no claim about its being better than the salvarsan.

Miss L., who was present, would probably remember a case which was a little more severe than these. The glands in the neck were as hard as eggs, showing extensive involvement. Dr. Hurd said that it was hard to remove the tissue. Miss L., with a tongue depressor held the mouth open and the necrotic tissue was cut away with the scissors until it was possible to get right down to the ulcerated area. In that severe case the acid was applied once a day, and every day one could see the disappearance of the germ from the field of the microscope. The Doctor spoke of the presence of the Vincent's spirillum as being more or less typical to the oral cavity. There is considerable literature on the subject in French and German, and one of the writers states the seriousness of the disease when complicated by diptheria was very great. The Doctor said something about these germs not being the cause of the ulceration, authorities claim that the Vincent germs are responsible for this peculiar form of ulceration; while the spirilla are present in many cases, quite a variety of them; they are present in dirty mouths, especially around the teeth.

The last case was presented with a tentative diagnosis, and it might be an epithelioma, but Dr. Abraham wished the members to see the case. He would have a section made for pathological examination, and would also have extensive blood tests made to eliminate if possible, Hodgkin's disease, leucaemia, etc. He had not intended to present the case with an absolute diagnosis of initial lesion, although when first seen it had all the appearances of such a condition—a typical indurated, ulcerated area. The raised edge had only appeared in the last few days. He would report on the case later.

DR. HARRIS asked if there was any contra-indication to making use of the therapeutic test.

DR. ABRAHAM replied in the negative, and said that he would give salvarsan and make all the usual tests.

DR. HARRIS said he would reverse that proceeding and give first a reasonably long test with a strong anti-syphilitic treatment.

Case of Orbital Perforation Complicating Nasal Sinusitis. (Patient previously presented.) DR. T. J. HARRIS.

DR. HARRIS stated that he had presented this patient before the Section at the January meeting, and had then promised to show the case again later in the season. The perforation had followed an ethmoiditis and empyema of the frontal sinus.

At the time of the first presentation, the wisdom of the method of procedure adopted, viz: opening the ethmoidal cells intranasally was questioned and some doubt was expressed as to the ultimate outcome, but it was expressly stated that the method was pursued on account of the exigency of the case. The ethmoidal condition cleared up promptly but the course of healing was complicated by an osteomyelitis of the frontal bone which developed with formation of a number of abscesses. Among the measures adopted the patient received a thorough course of an autogenous vaccine (streptococcus albus), which did more than anything else toward checking the progress of the osteomyelitis.

At present the patient shows still a little reddening at the eyebrow, but all that was not absolutely cured was a small fistula, which Dr. Harris said probably represents an effort of nature to extrude a small fragment of bone. The discharge from the ethmoid had ceased long ago, and the patient was well and going to his work.

Dr. Harris said that when he presented the case in January he was under the impression that the infection present was a rather rare one, but he had since learned that at the Manhattan Eye, Ear and Throat and other hospitals there have been a succession of cases of streptococcus albus infection this winter.

DISCUSSION.

DR. YANKAUER said that a year ago he had had a similar case. The patient complained chiefly of tinnitus and deafness. On the posterior wall of the Fossa of Rosenmüller was a thickening and a peculiar grayish, irregular appearance. A specimen was removed and it proved to be a spindle-cell sarcoma. The patient subsequently died. He was about seventy years old.

Presentation of Specimens of Malignant Conditions. DR. L. M. HURD.

DR. HURD said he thought the Section might be interested in seeing these specimens, one of which possessed considerable clinical interest. The other was simply a rather unusually good specimen of epithelioma of the arytenoid cartilage and epiglottic fold.

The larynx presented was rather large and broad. In 1911 Dr. Coakley saw the patient, a man, and found in the interior commissure what looked like a white mass that might be either a cyst or a papilloma. The patient had been referred by Dr. W., and was sent back with that diagnosis.

In 1913, the patient consulted Dr. Hurd, who examined him and found a pedunculated growth about a third of an inch in length, attached to the anterior commissure, and with such a slight pedicle that in using the Elsberg applicator to cocainize the region the growth was rubbed off. In 1914, the patient returned with another pedunculated growth of the anterior commissure, which was removed; and still again in April, 1915, another popilloma was removed—all pedunculated. Then patient disappeared until April of this year, when he returned with the larynx almost blocked. This time he was urged to have a tracheotomy done immediately, but he wanted to go back home for a week. He returned and a tracheotomy was done, and a week later a laryngectomy was performed. The larynx was absolutely filled up—apparently no

air space whatever, and yet the man was breathing through the larynx. The operation was performed ten days ago.

The other case had no particular history, except that for three or four months he felt a fulness in the throat and suffered from dysphagia. The growth especially involved the arytenoid. On looking into the larynx the mass could be seen, but on taking out the larynx it was found to have filled up to the thyroid cartilage. It was an enormous mass. Microscopic examination showed it to be epithelioma. It was removed on Saturday by the two stage operation.

DISCUSSION.

DR. MACPHERSON asked about the after treatment in such cases. A high mortality, due to pneumonia, usually follows. It would seem that some method might be devised whereby septic infection would not get into the lungs so readily.

DR. HURD said that both patients were operated upon by the two-stage operation. The tracheotomy tube is usually left in for a week, but the patient wanted his son to come down. In the meantime, the teeth were cleaned as thoroughly as possible. Each of the men had lost some teeth, but the mouth was put in as good condition as possible. A low tracheotomy was performed, and dissection was made all around the trachea and up one side of the larynx. It was then packed with iodoform gauze, and at the end of a week it was blocked off with tissue. The first case was operated under cocaine. This man had a very thick neck, and he suffered considerable shock and his temperature after operation was 106. His pulse went to pieces; then he began to improve, and picked up rapidly, though he had some bronchitis. Unfortunately the wound became infected and everything sloughed out. He is in good shape now, however, and is sitting up in bed and is happy.

The second man was operated upon under ether oil anesthesia, and some preliminary blocking off of the trachea. He had anything but a clean wound, and yet he has had a practically normal temperature since Saturday.

Paper: Fossa of Rosenmuller from a Rhinological Standpoint. DR. SIDNEY YANKAUER.

(To be published in a subsequent issue of THE LARYNGOSCOPE.)

DISCUSSION.

DR. HARRIS said that a paper by Dr. Yankauer is always refreshing and instructive, for when he takes hold of a subject he always handles it thoroughly. Some of the points which Dr. Yankauer had brought out in reference to sinusitis, and also in regard to systemic infection were rather new. His statements in regard to cough were also most instructive, for few would think of looking into the fossae of Rosenmüller for the causation of a cough. The main difficulty lies in keeping down the adhesions in these fossae, and Dr. Yankauer was doing just about what all have been doing for years, though perhaps he had been more fortunate in his nitrate of silver applications than some. Certainly whatever is used in breaking down these adhesions may give the desired result for a time, but then they reform; it is very difficult to keep these fossae in the desired condition. Hereafter he (Dr. Harris) intended to pay more attention to this region as a possible source of nasal and pharyngeal symptoms.

DR. ROBINSON expressed the wish that Dr. Yankauer would describe the conditions found in several of the lesions of which he had spoken.

DR. GUTTMAN said that the view of the relation of the bands in the fossa of Rosenmüller extending to the eustachian cushion from the rhinological standpoint was quite original. They used to be found quite often in cases of tinnitus where there was no other cause found. They used to be severed with the finger, and some of the results were brilliant. They were mainly the result of faulty adenoid operations or after-diphtheritic conditions.

DR. YANKAUER said he believed that in most instances these adhesions follow the presence of adenoids, but adhesions in the fossa of Rosenmüller are not the only results left after inflamed adenoids have disappeared. In the space between the fossae one often sees small holes and pockets which correspond exactly in their distribution to the divisions between the combs of the adenoid mass; and it is easy to see how various portions become adherent when the adenoid mass becomes inflamed, and when the inflammation disappears the bands remain, and you get the various pockets and adhesions.

In regard to the method of getting rid of these adhesions, Dr. Yankauer said he thought it bad practice to break them with the finger; they are usually old; when found in adults, they have been there since childhood and are very dense and hard, and form bands which are sometimes difficult to cut through even with the forceps. When an attempt is made to break them down, the mucous membrane is torn through and strips are torn off with the adhesions when they are freed. The mucous membrane closes up again, and the adhesion is reproduced. For freeing these adhesions, he uses a punch like an ordinary nasal punch, but a little longer; it was originally devised to open the sphenoid sinus. With this he punches out a piece of the adhesion, two or three millimetres wide, working through a direct speculum. There is no difficulty with patients who have been trained to the use of the speculum, or if cocaine is used. When the bleeding ceases, an application of 10 per cent nitrate of silver is made; later a weaker solution is used on a cotton tipped applicator, making pressure on the parts and so massaging them. Very often, in young persons, the posterior wall will fall away, as if it were stretched and elastic. In adults, the recession of the mucous membrane is not so prompt. There is little difficulty with the reformation of these adhesions when they have been properly cut away.

In regard to the deep pockets, such as Dr. Hurd described, they probably occur oftener than is supposed. If an examination is made with the post-nasal mirror they cannot be seen, nor with the pharyngoscope; but if one is accustomed to use the direct speculum, and gets the beak back of the eminence and lifts it forward, the full depth can be seen. In the case described by Dr. Hurd, where the fossa is long and narrow, if he will test the posterior pharyngeal wall, he will probably find very thick tissue—the remains of the adenoids. If that adenoid tissue has all been cut out, the only thing to do is to wait until the mucous membrane recedes.

DR. HARRIS, replying to an inquiry from Dr. Yankauer as to how he removes these bands, said that he uses the Holmes curette and the naso-pharyngoscope.

DR. YANKAUER said he did not see how they could be removed in that way, but that it was very easy to do the work with the direct speculum.